

Environmental legal compliance through self-regulation in the petrochemical industry in South Africa

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ABSTRACT

Traditionally, command and control regulation in environmental management is known for its hierarchical top-down state-led approach to compliance. This approach involves instruments where the conduct of the regulated community is prescribed by a firm environmental legislative regime through strict monitoring and the penalising of non-compliant behaviour. The petrochemical industry in South Africa operates its business activities in this inflexible state-led regulatory framework to accomplish legal compliance in its environmental management practices.

Conventional regulation to secure environmental protection is shifting to a new self-regulatory approach with emerging responsiveness in the industry. A need for a governance model that underscores sustainable development through cooperative partnerships between the state, regulated community and other actors is developing. The study aims explore environmental legal compliance through self-regulation in the petrochemical industry in South Africa. In exploring the main aim of the study three broad objectives will be pursued, that is self-regulation and hybrid environmental governance, environmental legal compliance audits as well as the South African legal framework which provide the regulatory context for these concepts.

Environmental governance suggests an innovative interpretation of what "reasonable legislative and other measures" contemplated in section 24 of the *Constitution* as well as "voluntary organisation or sector-based instruments" in terms of section 23A of the *National Environmental Management Act* 107 of 1998 (NEMA) may assume to provide in terms of environmental protection. A mixture of self-regulation environmental management instruments to bring about legal compliance in a hybrid arrangement between different stakeholders to move environmental governance inside the walls of the industry with government oversight is proposed.

Taking on different management standards in a single environmental management system specifically designed for the petrochemical industry could result in improved environmental performance related to the management of environmental aspects contemplated in ISO 14001:2015. Sustainable integrated environmental management could be realised through the monitoring of and assurance to conditions contained in authorisations, permits, and licences integrated into a company's environmental management plans. Achieving environmental performance in the petrochemical industry through environmental compliance could be encouraged following a risk-based methodology towards environmental protection through legal audits.

The concerns of the state, community and the industry regarding environmental protection, socio-economic interest and profitability are collectively addressed on a mutually beneficial basis within a new paradigm of hybrid governance where environmental protection is no longer the prerogative of the state only. It is argued in this study that the adoption of regulated self-regulation through hybrid environmental governance in the petrochemical industry within the legislative provisions thereof could provide for an innovative governance approach to ensure environmental compliance. The study also proposes recommendations for environmental governance from a self-regulatory perspective for the petrochemical industry, academia (legal) and the regulator.

Key words: Legal compliance, environmental governance, self-regulation, petrochemical industry, hybrid environmental governance, environmental protection, South Africa

OPSOMMING

Die staat is tradisioneel bekend vir sy hiërargiese benadering tot voldoening betreffende die bestuur en beheer van omgewingsbestuur. Hierdie benadering sluit maatreëls in wat 'n ferm omgewingswetgewende stelsel met streng monitering en die straf van nie-voldoende gedrag van die gereguleerde gemeenskap voorskryf. Die petrochemiese industrie in Suid-Afrika bedryf sy sake in hierdie onbuigsame, gestruktureerde staatsregulerende raamwerk om wetlike nakoming in sy omgewingsbestuurspraktyke te bereik.

Konvensionele regulering om die beskerming van die omgewing te verseker, verskuif tans na 'n nuwe selfregulerende benadering wat tot reaksie in die bedryf lei. 'n Behoeftes aan 'n bestuursmodel wat volhoubare ontwikkeling deur samewerking tussen die staat, die gereguleerde gemeenskap en ander rolspelers beklemtoon, is besig om te ontwikkel. Die studie het ten doel om die wetlike nakoming van die omgewing deur selfregulering in die petrochemiese bedryf in Suid-Afrika te ondersoek. By die ontsluiting van die studie se hoofdoel sal drie breë doelstellings nagestreef word, naamlik selfregulering en hibriede omgewingsbestuur, ouditering van omgewingsregtelike voldoening asook die Suid-Afrikaanse wetlike raamwerk wat voorsiening maak vir hierdie konsepte.

Omgewingsbestuur dui op 'n innoverende interpretasie van wat "redelike wetgewende en ander maatreëls" in artikel 24 van die *Grondwet* beoog, asook die aanvaarding van "vrywillige organisasie- of sektorgebaseerde instrumente" ingevolge artikel 23A van die *Wet op Nasionale Omgewingsbestuur* 107 van 1998 ten aansien van omgewingsbeskerming. 'n Mengsel van omgewingsbestuursinstrumente vir selfregulering om wetlike nakoming deur middel van 'n hibriede reëling tussen verskillende belanghebbendes teweeg te bring, word voorgestel. Dit het ten doel om omgewingsbestuur te wysig sodat dit binne die konteks van die industrie, met toesig deur die owerheid, plaasvind.

Deur verskillende bestuurstandaarde in 'n enkele omgewingsbestuurstelsel te ontwikkel wat spesifiek vir die petrochemiese bedryf ontwerp is, kan verbeterde omgewingsprestasie meebring wat verband hou met die bestuur van omgewingsaspekte vervat in ISO 14001:2015. Volhoubare, geïntegreerde omgewingsbestuur kan bereik word deur die monitering en voldoening aan vereistes in magtigings, permitte en lisensies van 'n maatskappy se omgewingsbestuursplanne te integreer. Die bereiking van omgewingsverrigting in die petrochemiese industrie deur omgewingsvoldoening kan aangemoedig word deur regsoudits aan die hand van 'n risiko-gebaseerde metodologie vir omgewingsbeskerming.

Die kommer van die staat, die gemeenskap en die industrie ten opsigte van omgewingsbeskerming, sosio-ekonomiese belange en winsgewendheid word gesamentlik aangespreek op 'n wedersyds voordelige basis binne 'n nuwe paradigma van hibriede regulering waar die beskerming van die omgewing nie meer die prerogatief van die staat alleen is nie. In hierdie studie word daar aangevoer dat die aanvaarding van gereguleerde selfregulering deur middel van hibriede omgewingsbestuur in die petrochemiese bedryf voorsiening kan maak vir 'n innoverende bestuursbenadering binne die wetgewende bepalings daarvan om te verseker dat die omgewingvoldoening plaasvind. Die studie bied ook aanbevelings aan vanuit 'n selfregulerende perspektief vir omgewingsbestuur vir die petrochemiese industrie, akademie (regsprofessie) en die Staat.

Sleutelwoorde: Wetlike nakomingsoudits, omgewingsbestuur, selfregulering, petrochemiese industrie, hibriede omgewingsbestuur, omgewingsbeskerming, Suid-Afrika

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DEDICATION

I dedicate this work to:

My late father, Daniel Smit, and late father-in-law, Hermanus Saunderson. They were the pillars of my development and desire for continuous learning. Also, my mother, who had to leave school at what was then standard three to find a job in support of her parents and siblings. She encouraged her own children to dream big, go big and make a difference. My mother-in-law never had the opportunity to attend school beyond primary school, yet her advice and lessons in life are a true testimony to having a superior education through lifelong learning.

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List of Abbreviations

AEL	Air emission licence
AIChE	American Institute of Chemical Engineering
<i>Annu Rev Environ Resour</i>	<i>Annual Review of Environment and Resources</i>
AQMP	Air Quality Management Plan
BA	Basic assessment
BDMP	Biodiversity Management Plan
CAIA	Chemical and Allied Industries' Association
CC	Constitutional Court
CMA	Catchment Management Agency
CoAL	Coal of Africa Limited
CONNEPP	Consultative National Environmental Policy Process
<i>Corp Govern</i>	<i>Journal of Corporate Governance</i>
CRMP	Compliance Risk Management Plan
CTL	Coal to liquid
DEA	Department of Environmental Affairs
DEAT	Department of Environmental Affairs and Tourism
DOH	Department of Health
DQS	Delhi Quality Services
DTI	Department of Trade and Industry
DWA	Department of Water Affairs
EA(s)	Environmental authorisation(s)
ECA	<i>Environmental Conservation Act</i> 73 of 1989
ECO	Environmental Control Officer
Ecol Econ	Ecological Economics
Econ Bull	Economic Bulletin
EHIA	Environmental Health Impact Assessment
EIA	Environmental Impact Assessments
ELI	Environmental legal indicator
EMAS	Eco-Management and Audit Scheme
EMC	Environmental Management Committee
EMI	Environmental Management Inspectorate
EMP	Environmental Management Plan
EMP	Environmental Management Programme
EMS	Environmental Management System
Environ Sci Ind J	Environmental Science: An Indian Journal
EPA	Environmental Protection Agency
Eur J Int Relat	European Journal of International Relations
Euro Manag J	European Management Journal
EXCO	Executive Committee
GARR	Governance Assurance Risk and Reporting
GHG	Greenhouse gas
GIS	General Information Systems
Glob Gov	Global Governance
GMM	Govan Mbeki Municipality
GTL	Gas to liquid
HIA	Heritage impact assessment

HOD	Head of Department
ICCA	International Council of Chemical Associations
IEA	International Energy Agency
IEG	Integrated environmental governance
IEM	Integrated environmental management
IEMP	Integrated environmental management programme
IM	Information Management
IMS	Integrated Management System
INECE	International Network for Environmental Compliance and Enforcement
IP	Intellectual property
ISO	International Organization for Standardization
IWUL	Integrated Water Use Licence
J Environ Econ Manag	Journal of Environmental Economics and Management
J Environ Manage	Journal of Environmental Management
J Regul Econ	Journal of Regulatory Economics
LCA	Life cycle assessment
MEC	Member of the Executive Council
MHI	Major hazardous installation
MHSA	<i>Mine Health and Safety Act 29 of 1996</i>
MPRDA	<i>Minerals and Petroleum Resources Development Act 28 of 2002</i>
MSOHS	Management System of Occupational Health and Safety
MWP	Mine and Works Plan
NEM:AQA	<i>National Environment Management: Air Quality Act 39 of 2004</i>
NEM:BA	<i>National Environmental Management: Biodiversity Act 10 of 2004</i>
NEM:ICMA	<i>National Environmental Management: Integrated Coastal Management Act 24 of 2008</i>
NEM:PAA	<i>National Environmental Management: Protected Areas Act 57 of 2003</i>
NEM:WA	<i>National Environmental Management: Waste Management Act 59 of 2008</i>
NEMA	<i>National Environmental Management Act 107 of 1998</i>
NEMAA	<i>National Environmental Management Amendment Act 30 of 2013</i>
New Perspect Regulat	New Perspective Regulation
NGO(s)	Non-governmental organisation(s)
NHRA	<i>National Heritage Resources Act 25 of 1999</i>
NWA	<i>National Water Act 36 of 1998</i>
OECD	Organisation for Economic Co-Operation and Development
OHSA	<i>Occupational Health and Safety Act 85 of 1993</i>
OHSAS	Occupational Health and Safety Assessment Series
OHSMS	Occupational Health and Safety Management System
OME	Operations Manufacturing Entity

PDCA	Plan-Do-Check-Act
PER/PELJ	Potchefstroomse Elektroniese Regsblad/Potchefstroom Electronic Law Journal
Pol Stud J	Policy Study Journal
PPP	Pollution Prevention Plan
QMS(s)	Quality Management System(s)
ROD	Record of Decision
SANAS	South African National Accreditation System
SANParks	South African National Parks
SANS	South African National Standards
SCA	Supreme Court of Appeal
SCO	Secunda Chemical Operations
SDS	Safety Data Sheets
SEDA	Small Enterprises Development Agency
SEIA	Strategic environmental impact assessments
SEMA's	Sector Environmental Management Acts
SHE	Safety health environment
SHEQ	Safety health environment and quality
SIA	Social impact assessments
SKA	Square Kilometre Array
Stats SA	Statistics South Africa
SVP	Senior Vice-President
TWG	Technical work group
UK	United Kingdom
UNEP	United Nations Environment Programme
USA	United States of America
VP	Vice-President
WML	Waste Management Licence
WMP	Waste Management Plan
WUL	Water Use Licence

Chapter 1

Introduction

1.1 Background

The South African chemical sector is the largest of its kind in Africa and is highly complex and diversified.¹ The business behaviour of actors within the petrochemical industry as well as the impact of the industry on the environment is strictly regulated.² Accordingly, the industry has responded by attracting highly skilled employees who have over the years built up a reservoir of institutional knowledge to manage complex operational and regulatory management systems. At present, ongoing monitoring, measuring and reporting through internal and external legal audits as a verifying mechanism for compliance³ have become essential to ensure environmental compliance that complements and supports state regulation in an enabling regulatory setting.

Clements *et al*⁴ claim that due to the complexity of the manufacturing processes in the chemical industry, many of its products are potentially hazardous at certain production stages some of which require environmental authorisations. These processes often require high temperatures, high pressures, and reactions which can be dangerous unless cautiously controlled by the operators. Mbohwa and Sobiya⁵ explain that the chemical industry is one of the important industries in South Africa that is continuously being pressurised to operate in an environmentally friendly manner. The petrochemical industry with its complex nature has to manage its

¹ Department of Labour *Chemical sector report on skills development* 16.

² South Africa has a sophisticated environmental legislative regime in which the petrochemical industry has to conduct its operations to fulfill the requirements of section 24 of the *Constitution of the Republic of South Africa*, 1996² within a strict environmental compliance enforcement framework. Lehmann "Voluntary Compliance Measures" 269-295. The study focuses on environmental governance in a petrochemical factory in Mpumalanga where the researcher is employed as a Safety Health and Environment Regulatory Enablement Specialist. One of his responsibilities is to provide the required environmental compliance enablement advise to company management to achieve sustainable and effective SHE legal compliance for its operation in Secunda. His experience in environmental governance within the said company is included in the study.

³ See Chapters 2, 3 and 4. Environmental legal compliance should however be achieved prior to auditing.

⁴ Clements *et al* *The essential chemical industry* 10.

⁵ Mbohwa and Sobiya "Effectiveness of ISO 14001 in the South African chemical industry" 57.

processes and activities in compliance with the conditions attached to environmental authorisations (EAs), exemptions, directives, permits and a licence to operate.⁶ Pure self-regulation in the industry assumes that an organisation could conduct its business activities within the framework of its own regulatory standards independent from state control.⁷ However, total self-regulation without state-led regulatory oversight does not appear to provide a sustainable solution to environmental protection.⁸

Regulators are increasingly pressurising the industry to act responsibly on environmental factors.⁹ This, according to Burritt and Christ,¹⁰ is the result of stricter environmental legislation and regulatory frameworks that impose a compliance burden on organisations that are forced to monitor activities and outputs even more closely. With a view to reaching the objectives of environmental protection contemplated in section 24 of the *Constitution of the Republic of South Africa*, 1996¹¹ in a strict command and control regime,¹² the petrochemical industry could take on the role of a surrogate regulator in line with the intended outcomes of ISO 14001:2015.¹³ Such a regulatory partnership with the state and other actors is a collaborative manner in which to address environmental challenges through self-regulation¹⁴ by implementing a mix of hybrid environmental governance instruments.¹⁵

In its quest to introduce the idea of hybrid environmental governance,¹⁶ the petrochemical industry could provide valuable input towards achieving sustainable legal compliance and regulatory assurance in a stricter governing framework. The

⁶ In the context of this study a licence to operate means that a petrochemical company has a right to conduct its business in terms of its product portfolio for which different authorisations are required. License to operate also refers to the societal license to operate. As a responsible corporate citizen, a petrochemical company in the view of the researcher would need both an operational and societal license to operate.

⁷ In the petrochemical industry these self-regulatory standards could mean Responsible Care®, ISO 14001:2015, ISO 9001:2015 and ISO 45001:2018 as discussed in paragraphs 2.3.4, 2.4.2, 3.4 and 4.4 of Chapters 2, 3 and 4 respectively.

⁸ See Chapter 2 for a discussion.

⁹ Kotzee *Evaluating the awareness of environmental management accounting in the South African chemical industry* 4.

¹⁰ Burritt and Christ 2013 *Journal of Cleaner Production* 2.

¹¹ Hereafter the *Constitution*.

¹² Paragraph 2.2 of Chapter 2.

¹³ See paragraphs 2.4, 3.2, 4.4 and 5.1.1 of Chapters 2, 3, 4 and 5 for a discussion.

¹⁴ Paragraph 2.3 of Chapter 2.

¹⁵ Paragraph 2.4.2 of Chapter 2.

¹⁶ Paragraph 2.4 of Chapter 2.

adoption of mandated or regulated self-regulatory governance practices with the use of hybrid environmental compliance tools¹⁷ in the petrochemical industry could contribute to achieving environmental compliance in a proactive manner. The use of a voluntary organisation or sector-based instruments as contemplated in section 23A of the *National Environmental Management Act*¹⁸ to give effect to section 24 of the *Constitution* could be argued as a starting point for self-governance in the industry.¹⁹

An integrated management system (IMS)²⁰ where an organisation embraces various self-regulatory instruments could seek to incorporate EA, exemptions, directives, permit and licence conditions in a hybrid arrangement to achieve environmental compliance with its legal and other requirements.²¹ Craigie, Snijman and Fourie²² contend that, in general, environmental legislation prescribes material statutory mechanisms for organisations which both encourage and require compliance with, and facilitate enforcement of South Africa's contemporary environmental regime.²³ The authors state that compliance and enforcement mechanisms intended in legislation generally fall within two broader categories of either "command and control" mechanisms or "alternative compliance mechanisms".²⁴ Environmental governance tools to secure ecologically sustainable development could include "reasonable legislative and other measures" referred to in terms of section 24²⁵ of the *Constitution*.²⁶ These other measures in environmental compliance could be alternative and/or complement²⁷ tools to state-led command and control regulation if this regime is, for example, based on the sustainable development principles

¹⁷ See paragraphs 2.4.2 of Chapter 2.

¹⁸ 107 of 1998 hereafter the NEMA.

¹⁹ See paragraph 3.3 in Chapter 3.

²⁰ See paragraph 4.4.2 in Chapters 4.

²¹ See paragraph 3.2 in Chapter 3.

²² Craigie, Snijman and Fourie "Dissecting environmental compliance and enforcement" 41-64.

²³ See paragraph 3.2 in Chapter 3.

²⁴ Craigie, Snijman, and Fourie "Dissecting environmental compliance and enforcement" 41-64. These alternative self-regulatory instruments in the petrochemical industry include Responsible Care®, ISO 9001:2015, ISO 14001:2015 or ISO 45001:2018 which will be discussed in paragraphs 2.3.4, 2.4.2, 3.4 and 4.4 of Chapters 2, 3 and 4 respectively.

²⁵ Read with sections 31A-Q, 35, 49A and 49B of the NEMA.

²⁶ Nel and Wessels 2010 *PER/PELJ* 48-72. Also, in *Khabisi v Aquarella Investments 83 (Pty) Ltd* 2008 4 SA 195 (T) the court held that section 24(b) of the *Constitution* refers to "other measures" that include those aimed at ensuring environmental compliance and enforcement.

²⁷ Farina 2001 *The Clean Air Journal* 12.

contemplated in the NEMA which may advocate environmental legal compliance.²⁸ In an environmentally regulatory context, *other measures* presuppose a flexible governance approach that could present an opportunity to the petrochemical industry to go beyond compliance.

According to Nel and Wessels²⁹ alternative compliance mechanisms are increasingly being provided for in terms of permit or licence conditions of organisations. Similarly, the regulator could propose the formation of cooperative partnerships between organisations, the community, non-governmental organisations (NGOs) and the state to monitor compliance with licence conditions in what could be perceived as a move away from contemporary command and control regulation to new environmental governance.³⁰

Different stakeholders³¹ have a particular interest in the petrochemical industry's environmental performance³² and financial viability. They expect it to conduct its activities within the framework of formal environmental compliance having regard for society's demands for a clean or healthy environment.³³ State regulation as a function of government through command and control to ensure the protection of the environment³⁴ has over the years shifted away from conventional approaches to a new form of environmental governance³⁵ that joins hands with the regulated community, NGOs and different stakeholders to ensure a more cooperative regulatory

²⁸ King and Lenox 2000 *Academy of Management Journal* 698. Government regulation in the chemical industry is often intrusive and not efficient which may sometimes undermine compliance.

²⁹ Nel and Wessels *PER/PELJ* 59.

³⁰ Chamberlain 2017 *Law Environment and Development Journal* 1-12.

³¹ These include, for example, industry and business, employees, government agencies, non-governmental organisations (NGOs), communities, shareholders, environmentalists, regulators, the media, trade customers, financial institutions, consumers, etc. See White and Heckenberg "Legislation, regulatory models and approaches to compliance and enforcement" 12. The key stakeholder's group in this regard are activists, national, provincial and local government, educators, students, and labour unions, etc.

³² ISO 14001:2015 defines environmental performance as that it relates to the management of environmental aspects. See Chapter 2 for a discussion.

³³ Evangelinos, Nikolaou and Karagiannis 2010 *Journal of Hazardous Materials* 824.

³⁴ The State is charge with the constitutional duty to protect the environment for current and future generations in terms of the provisions of section 24 of the *Constitution*. Refer to Chapter 3.

³⁵ See paragraph 2.2.3 in Chapter 2.

regime. The role of the state has moved from a regulator of environmental protection to a facilitator of environmental governance.³⁶

Legal compliance in complex organisations often takes on a risk-based approach with various applications and strategies that may include a defined governance strategy, appropriate governance tools, regulatory and enablement support and assurance, and compliance interventions.³⁷ Legal compliance audits³⁸ and hybrid environmental governance instruments are some of the assurance tools of an environmental management system (EMS). According to Gibson³⁹ an EMS is:

a set of management tools and principles that are intended to help organisations integrate environmental issues into the conduct of their daily business. An EMS is designed to guide an organisation in allocating resources, assigning responsibilities and continually evaluating its practices, procedures, and processes in order to enhance environmental management.

In terms of ISO 14001:2015 the EMS of an organisation “[i]s part of the *management system* used to manage *environmental aspects*, fulfil *compliance obligations*, and address *risks and opportunities*”.⁴⁰ Environmental management through self-regulation could be, according to Sinclair,⁴¹ a win-win solution between the state and industry, as companies enhance their productivity while at the same time protecting the environment. A public–private governance partnership between the industry and the state may be feasible in a country like South Africa with limited regulatory systems.⁴² Voluntary industry self-regulatory or hybrid governance instruments may provide a departure point for objective demonstrable legal compliance. Nel and Alberts⁴³ state that for companies to effectively drive legal compliance,

[o]rganisations need to, as a minimum, understand: (a) which laws apply to them, (b) who the regulatory agencies are, (c) how these applicable

³⁶ See paragraph 3.3.1 in Chapter 3.

³⁷ Assurance tools could include regular inspections, monitoring, measuring and legal compliance audits to determine the organisation’s adherence to its legal obligations.

³⁸ See paragraphs 2.5, 3.5 and 4.5 in Chapters 2, 3 and 4 respectively. Internal company guidelines are used to conduct these legal compliance audits which may include a reference to ISO 19600:2014 (Compliance Management Systems - Guidelines) and ISO 10011:2018 Guidelines for auditing management systems.

³⁹ Gibson 2005 *Environmental Quality Management* 5.

⁴⁰ ISO 14001:2015 2.

⁴¹ Sinclair 1997 *Law & Policy* 529.

⁴² Hönke *et al* “Fostering Environmental Regulation?” 4.

⁴³ Nel and Alberts “Environmental management” 21.

regulatory measures apply to them, (d) whether they are indeed compliant and (e) what needs to be done to objectively demonstrate sustained compliance.

From Nel and Alberts's assertion it appears that environmental compliance, with the application of a mixture of relevant governance tools, is possible in a command and control regulatory regime where the organisation understands its regulatory context. Therefore, the following research question was formulated: How could self-regulation contribute to achieving environmental legal compliance from a governance perspective within the petrochemical industry in South Africa?

1.2 Aim of the study

The aim of this study was to explore how self-regulation as an environmental governance tool could contribute to accomplish environmental legal compliance in the petrochemical industry. In pursuance of the aim of the study reference will be made to three broad objectives listed below:

(a) Objective one: Self-regulation and hybrid environmental governance⁴⁴

This objective will be focussing on regulation, governance and environmental governance⁴⁵ self-regulation⁴⁶ and hybrid environmental governance;⁴⁷

(b) Objective two: Environmental audits⁴⁸

This objective will discuss the types of environmental audits,⁴⁹ audits required by legislation⁵⁰ and voluntary audits conducted by organisations;⁵¹

(c) Objective three: A legal framework for self-regulation and hybrid environmental governance⁵²

⁴⁴ Chapter 2.

⁴⁵ Paragraph 2.2 in Chapter 2.

⁴⁶ Paragraph 2.3 in Chapter 2.

⁴⁷ Paragraph 2.2 in Chapter 2.

⁴⁸ Chapter 3.

⁴⁹ Paragraph 3.3 in Chapter 3.

⁵⁰ Paragraph 3.4 in Chapter 3.

⁵¹ Paragraph 3.5 in Chapter 3.

⁵² Chapter 4.

The last objective will focus on command and control regulation,⁵³ self-regulation,⁵⁴ hybrid environmental governance⁵⁵ and environmental legal compliance audits.⁵⁶

Aligning with the aim of the study a case study on self-regulation in the petrochemical industry focussing on how hybrid environmental governance was implemented in Secunda Chemicals Operations will be discussed.⁵⁷ The study will conclude with the identification of any gaps with regard to self-regulation within the particular the petrochemical factory above and make recommendations for hybrid environmental governance in Sasol SA Ltd and finally some legal recommendations for the petrochemical industry in South Africa in general.⁵⁸

1.3 Research methodology

According to Du Plessis⁵⁹ "[l]egal research is generally understood as researching the law as found in the primary and secondary sources of law". The focus of this study restricted the researcher to a literature review of existing primary sources such as policies, regulations and case law,⁶⁰ supported by secondary sources such as books, chapters in books, journals, as well as electronic sources and material from other disciplines.⁶¹ With the advent of electronic sources in what is referred to as the "digital world"⁶² that increasingly require of lawyers partly to shift their mind-set to a situation where, in general, "time is accelerated and distance is compressed"⁶³ where environmental law research methodology shifts traditional boundaries.⁶⁴

⁵³ Paragraph 4.2 in Chapter 4.

⁵⁴ Paragraph 4.3 in Chapter 4.

⁵⁵ Paragraph 4.4 in Chapter 4.

⁵⁶ Paragraph 4.5 in Chapter 4.

⁵⁷ Chapter 5.

⁵⁸ Chapter 6.

⁵⁹ Du Plessis 2007 PER/PELJ 24. Also see Venter *Legal Research* 16-17, 41-45 and Venter *et al Regsnavorsing*.

⁶⁰ Case law on self-regulation in environmental governance in South Africa is very much restricted. The research for this study was concluded between June to September 2018. The researcher did include subsequent new regulations and case law that could have a bearing on this study post this date.

⁶¹ Nel and Kotzé *Environmental management: An introduction* 11. The concept of "environmental management" is moving away from the domination in the natural sciences to a shared interest by diverse academic disciplines. See Barrow 2005 *Environmental Management and Development* 16. Also see Venter *Legal Research* 16-17, 41-45 and Fisher *Legal Reasoning in Environmental Law* 23-64,

⁶² Du Plessis 2007 PER/PELJ 25.

⁶³ Katsh *Law in a digital world* 79.

⁶⁴ Fisher *et al* 2009 *Journal of Environmental Law* 213-250.

Further hereto the company Secunda Chemicals Operations, a division of Sasol SA Ltd, was used to illustrate the introduction of self-regulatory measures within the petrochemical industry. Permission for the study to be used as a backdrop for the study was obtained from the company.⁶⁵ The petrochemical company where the researcher was employed at the time of the study was used as a case study to illustrate the concept of self-regulation as applied by the company.

In Chapter 2 of this study the difference between regulation, governance and environmental governance is discussed, followed by a theoretical framework, drivers and feasibility for self-regulation. This chapter also looks at what could be accomplished through a hybrid approach in environmental governance. Chapter 3 focusses on environmental audits while Chapter 4 analyses the South African legal framework in relation to self-regulation. Chapter 5 focuses on what the petrochemical industry has accomplished through self-regulation. Chapter 6 concludes with recommendations to address any possible gaps with regard to self-regulation within the petrochemical industry in South Africa.

⁶⁵ Permission to conduct the study was obtained from the Senior Manager as well as the Vice President Safety Health and Environment at the petrochemical company (see memo attached hereto as Annexure A). Where reference is made to some internal procedures and regulations within the petrochemical company prior approval with regards to the relevant IP protocol of the company was obtained. No direct reference to such sources will be made in the absence of such approval.

Chapter 2

Self-regulation and hybrid environmental governance

2.1 Introduction

This chapter illustrates self-regulation as indicated in the objective one⁶⁶ as a viable option available to the petrochemical industry in ensuring sustainable environmental legal compliance in a command and control regime.⁶⁷ Development in environmental regulation assumes a move away from state-led command and control regulation to innovative and cooperative measures to realise the objective of environmental protection.⁶⁸

The chapter commences with a discussion of government regulation,⁶⁹ comparing government vis-à-vis governance⁷⁰ and environmental governance,⁷¹ leading to a discussion of self-regulation⁷² and hybrid environmental governance.⁷³ Self-regulation is discussed with reference to what it entails,⁷⁴ its theoretical framework,⁷⁵ drivers⁷⁶ and limitations,⁷⁷ and instruments for self-regulation.⁷⁸ This inquiry led to the notion of hybrid environmental governance⁷⁹ focussing on forms⁸⁰ and instruments for hybrid

⁶⁶ See paragraph 1.2 of Chapter 1.

⁶⁷ Jordan, Wurzel and Zito “New’ instruments of environmental governance” 7. In this study, safety, health and environmental (SHE) legal compliance is sometimes also referred to as legal compliance.

⁶⁸ In terms of ISO 14001:2015 environmental protection is defined as that the management of an organisation shall commit amongst others to protect the environment which can include sustainable resource use, climate change mitigation and adaptation, and protection of biodiversity and ecosystems. Also, the intended outcome of IS 14001 is amongst others

⁶⁹ Paragraph 2.2.1.

⁷⁰ Paragraph 2.2.2.

⁷¹ Paragraph 2.2.3.

⁷² Paragraph 2.3.

⁷³ Paragraph 2.4.

⁷⁴ Paragraph 2.3.1.

⁷⁵ Paragraph 2.3.2.

⁷⁶ Paragraph 2.3.3.

⁷⁷ Paragraph 2.3.4.

⁷⁸ Paragraph 2.3.5.

⁷⁹ Paragraph 2.4.

⁸⁰ Paragraph 2.4.1.

environmental governance.⁸¹ The chapter concludes with a discussion of legal audits⁸² as a measure to verify environmental compliance.

2.2 Regulation, governance and environmental governance

2.2.1 Government regulation

Traditionally, regulation was thought of as a two-part process that involves the government as the regulator and business as the regulated community.⁸³ Government regulation could take a direct or indirect approach with regard to the regulated community.⁸⁴ The relationship represented a hierarchical structure where direct regulation took a variety of forms, the most common of which were environmental standards.⁸⁵ These standards imposed uniform requirements relating to broad categories of business activities to reduce environmental harm to socially accepted levels.⁸⁶ Command and control regulation was designed to prohibit or restrict environmentally harmful activities.⁸⁷ EAs,⁸⁸ issued by a competent authority to the petrochemical industry for its activities, are still the preferred and favoured command and control instruments. Through EAs the state could enact the required emission and pollution standards and ensure that non-complaint behaviour is sanctioned.⁸⁹ The

⁸¹ Paragraph 2.4.2.

⁸² Paragraph 2.5.

⁸³ Gunningham and Sinclair "Smart regulation" 133.

⁸⁴ See Nel and Alberts "Environmental Management and Environmental Law in South Africa - An Introduction" 1-32.

⁸⁵ See for example: *National Norms and Standards for disposal of Waste to Landfill*, GN R636 in GG 36784 of 23 August 2013; *Consultation on applications received for the Exclusion of Waste Streams or a portion of such waste stream from the definition of waste for the purposes of beneficial use*, GN R1077 in GG 42645 of 16 August 2019; *Regulations to phase-out the use of polychlorinated biphenyls (Pcbs) materials and polychlorinated biphenyl (Pcbs) contaminated materials*, GN R549 in GG 37818 of 10 July 2014; *Environmental Impact Assessment Regulations*, 2014, GN R982 in GG 38282 of 4 December 2014 as amended; *Regulations relating to qualification criteria, training and identification of, and forms to be used by, environmental management inspectors and environmental mineral resource inspectors*, GN R480 in GG 40879 of 31 May 2017; *Regulations laying down the procedure to be followed for the adoption of spatial tools or environmental management instruments*, GN R542 in GG 42380 of 5 April 2019; *National pollution prevention plans regulations*, GN R712 in GG 40996 of 21 July 2017; and *Norms and standards for biodiversity management plans for ecosystems*, GN R83 in GG 37302 of 7 February 2014.

⁸⁶ Gunningham 2009 *Journal of Environmental Law* 182.

⁸⁷ Gunningham and Grabosky *Smart regulation* 38.

⁸⁸ In terms of section 1 of the NEMA an EA means the authorisation by a competent authority of a listed activity or specified activity in terms of this Act, and includes a similar authorisation contemplated in a specific environmental management Act.

⁸⁹ Command and control instruments could, amongst others, include an EA, waste management licence, (WML), air emissions license (AEL), water use licence (WUL) and a mining right. In the historical context an EA could also mean a records of decision (RoD) or permit issued under the *Environment Conservation*

setting of norms and standards, authorisations and enforcement are the strongest features of command and control regulation.⁹⁰ Compliance and enforcement⁹¹ in a command and control regulatory regime to reach these objectives is commonly known.⁹² However, it also has challenges that have been comprehensively researched, such as the following:

- (a) It is costly and focuses on end-of-pipe solutions.⁹³
- (b) Organisations only comply with environmental laws to avoid penalties.⁹⁴
- (c) Companies take regulations as a measure of societal expectations and interpret them as a guide to their moral and social duties.⁹⁵
- (d) It is unsatisfactory in many respects.⁹⁶

Act 73 of 1989 (ECA); exemptions, for example issued by the Department of Water and Sanitation in terms of the ECA; directives; registration certificates; licences; and certificates issued by a relevant competent authority.

⁹⁰ See Nel and Alberts "Environmental management and Environmental Law in South Africa - An introduction" 1-32.

⁹¹ See INECE *Principles of Enforcement* (2005) available at <http://www.inece.org/principles/ch1.pdf>.

The *International Network for Environmental Compliance and Enforcement* (INECE) describes enforcement as the "[a]ctions that governments and others take to achieve compliance within the regulated community and to correct or halt situations where such compliance is not present". INECE indicates that for compliance and enforcement to be effective it should have the following outcomes:

- (a) Requirements that are enforceable;
- (b) An indication of who is subject to the requirements;
- (c) Promotion of compliance in the regulated community;
- (d) Monitoring of compliance;
- (e) A response to violations of the requirements;
- (f) A clarification of the roles and responsibilities of those involved; and
- (g) An evaluation of the success of the compliance and enforcement strategy.

These compliance outcomes could inform an appropriate governance strategy for legal compliance.

⁹² See Nel and Alberts "Environmental management and Environmental Law in South Africa - An introduction" 1-32.

⁹³ Sinclair 1997 *Law & Policy* 530.

⁹⁴ Gunningham, Kagan and Thornton 2004 *Law & Social Inquiry* 308.

⁹⁵ Wright *Factors motivating proactive health and safety management* 14.

⁹⁶ Paterson 2006 *PER/PELJ* 88-89. The author lists four concerns to support his view, that is:

- (a) the administration, compliance and enforcement of state regulation are costly and often undermined by capacity constraints;
- (b) regulations are frequently inflexible and cannot cater for geographical, sectorial or individual specificities;
- (c) the command and control approach does not encourage or facilitate voluntary initiatives by organisations and may restrict technological development and innovation due to strict enforcement to minimum regulatory standards; and
- (d) command and control fail to remedy the market failure to account for the use of environmental goods and services such as soil, air, water, fauna, flora and broader ecosystems.

- (e) It suffers from drawbacks and is rejected for other alternative regulatory approaches.⁹⁷
- (f) It focuses on reactive strategies that restrict organisations to go beyond compliance.⁹⁸
- (g) The State may lack the will or even authority to provide effective regulatory solutions.⁹⁹

Sinclair¹⁰⁰ contends that command and control compliance enforcement directs all environmental matters relating to the operational activities of the industry. This approach has been the dominant government response, particularly to point source pollution. It is, for the purpose of this study, necessary to determine what *government* and *governance* are as these terms are sometimes used interchangeably.

2.2.2 Government vis-à-vis governance

Enforcement of legislation to regulate the behaviour of the regulated community implies a role or function for government. Keohane and Nye¹⁰¹ define government as "[a] subset that acts with authority and creates formal obligations" for the regulatees. The government, therefore, enforces compliant behaviour from a command and control perspective through promulgated legislation and regulations. However, the authors contend that governance, on the other hand "[n]eed not be conducted exclusively by governments Private firms, associations of firms, non-governmental

⁹⁷ Kidd *The protection of the environment through the use of criminal sanctions* 278-279. The author asserts that command and control:

- (a) places excessive responsibility on the State where already strained resources are often directed at sectors other than the environment protection;
- (b) is not confined to enforcement only, but to set uniform instead of the industry- or source-specific standards;
- (c) puts a considerable financial burden on the State to monitor and enforce compliance;
- (d) is excessively inflexible as it typically requires the regulated parties to comply with either explicitly set standards or best available technology with no incentives to reduce emissions or develop and install new technology; and
- (e) it focuses on "end-of-pipe" solutions, mandating emission levels rather than providing for alternative cleaner technology approaches.

⁹⁸ Valero-Gil, Rivera-Torres and Garcés-Ayerbe 2017 *Sustainability* 8.

⁹⁹ Misiūnė *Environmental Self-regulation* 36.

¹⁰⁰ Sinclair 1997 *Law & Policy* 529.

¹⁰¹ Keohane and Nye "Introduction" 12. This study will also refer to terms such as civil regulators, surrogate regulators and hybrid regulators.

organisations (NGOs), associations of NGOs all engage in it ... to create governance".¹⁰² Accordingly, Finer¹⁰³ defines government as:

- (a) "the activity or process of governing" or "governance"
- (b) "a condition of ordered rule"
- (c) "those people charged with the duty of governing" or "governors", and
- (d) "the manner, method or system by which a particular society is governed".

Likewise, Misiūnė¹⁰⁴ explains that the term "governance" has its origin from the old French word *governance* which means "government, rule, administration, (rule of) conduct". Lemos and Agrawal¹⁰⁵ contend that government is not the same as governance and that these two concepts are mutually exclusive. "Governance" denotes a whole concept, rather than having a single meaning and differs from the concept "government".¹⁰⁶ State-led command and control in a monocentric regime over decision-making and policy implementation would then be a function of the government, while governance takes a different approach in the function of the public administration of the State. In this context, it is defined as:

... the use of managerial, political and legal theories and processes to fulfil legislative, executive and judicial governmental mandates for the provision of regulatory and service functions for the society as a whole or for some segments of it.¹⁰⁷

Enforcement thus emanates from the government in a typical top-down manner, while governance takes a more collaborative and participative approach to regulation. Government is characterised by the presence of state power through the enactment of laws and regulations to direct behaviour and sanctions non-compliance. Governance, however, could "[i]nclude the actions of the State and, in addition, encompasses actors such as communities, businesses, and NGOs".¹⁰⁸ Holley¹⁰⁹ claims

¹⁰² Keohane and Nye "Introduction" 12.

¹⁰³ Finer *Comparative government* 3-4.

¹⁰⁴ Misiūnė *Environmental Self-regulation* 32.

¹⁰⁵ Lemos and Agrawal 2006 *Annu Rev Environ Resour* 298.

¹⁰⁶ Lemos and Agrawal 2006 *Annu Rev Environ Resour* 298.

¹⁰⁷ Rosenbloom 1986 *Public administration: Understanding management, politics and law in the public sector* quoted in Kotzé *A legal framework for integrated environmental governance* 25.

¹⁰⁸ Lemos and Agrawal 2006 *Annu Rev Environ Resour* 298.

¹⁰⁹ Holley "Environmental regulation and governance" 741. Also, see Gunningham 2009 *Journal of Environmental Law* 179-212.

that the initial approach to managing environmental problems was through governments together with the enforcement of strict rules and standards set out in legislation as well as treaties by their agents. Armitage, De Loë and Plummer¹¹⁰ argue that the State is no longer the most important source of environmental decision-making as other actors have come into the environmental field. This phenomenon presupposed a move away from government to governance due to the "broader processes and institutions through which societies make decisions that affect the environment".¹¹¹

Governance would then indicate a change in the method of state regulation and not only the regulatory approach created by state authority. This change is indicative of the idea that the "era of management is over".¹¹² The State is no longer privileged and "[s]tate law is simply one node amongst many in a world of diffuse power and responsibility".¹¹³ Power is normally associated with the State and its functionaries. Governance, therefore, suggests a distribution of responsibilities amongst the State, civil society and industry. Where these responsibilities are shared in the context of environmental management, the idea of "environmental governance" comes to the fore, as discussed next.

2.2.3 Environmental governance

Environmental governance seeks to bring about legal compliance through regulation.¹¹⁴ Legal compliance in the operational context of a petrochemical company to legal and other requirements¹¹⁵ is a significant input in its overall governance strategy.¹¹⁶ Non-compliance with environmental legal requirements could be sanctioned by a state authority for the sake of driving the appropriate sustainable

¹¹⁰ Armitage, De Loë and Plummer 2012 *Conservation Letters* 245.

¹¹¹ Armitage, De Loë and Plummer 2012 *Conservation Letters* 245.

¹¹² Ludwig 2001 *Ecosystems* 758-776.

¹¹³ Gunningham 2009 *Journal of Environmental Law* 181.

¹¹⁴ Kotzé "Environmental governance" 107-108.

¹¹⁵ In terms of clause 6.1.3 of ISO 14001:2015 an organisation shall make a determination of its compliance conditions in order to ensure compliance to legal and other requirements applicable to such an organisation.

¹¹⁶ Legal compliance should mainly be achieved prior to internal or external legal audits required by legislations, conditions in permits and licences as well as in regards to certification of adopted management standards. Refer to paragraphs 2.5, 3.5 and 4.5 in Chapters 2, 3 and 4 for a discussion.

behaviour while inherent damage to a company's brand could occur. The concept of environmental governance according to Nel and Du Plessis¹¹⁷ assertion is:

The collection of legislative, executive and administrative functions, processes and instruments used by the government to ensure sustainable behaviour by all as far as the governance of environmental activities, products, services, processes and tools are concerned.

This definition takes a wider approach to the concept of governance and includes sustainable development as an underlying principle.¹¹⁸ Kotzé¹¹⁹ expands on the connection between sustainable development and environmental governance as follows:

A management process executed by institutions and individuals in the public and private sector to holistically regulate human activities and the effects of human activities on the total environment (including all environmental media, and biological, chemical, aesthetic and socio-economic processes and conditions) at international, regional, national and local levels; by means of formal and informal institutions, processes and mechanisms embedded in and mandated by law, so as to promote the present and future interests human beings hold in the environment.

The view that Kotzé takes on environmental governance includes different actors, processes and mechanisms that may provide solutions to environmental challenges in a sustainable way. Likewise, Paavola¹²⁰ asserts that environmental governance requires a broader understanding so as to include all solutions on offer to resolve conflicts over environmental resources. From Paavola and Kotzé's assertions, one could infer that a solution to environmental challenges could be offered by stakeholders other than the State as "[i]t includes the actions of the state and, in addition, encompasses actors such as communities, businesses, and NGOs".¹²¹ Consequently, the private sector could, for example, implement environmental management strategies to manage its production activities in such a way as to mitigate any possible environmental impacts resulting from its undertakings.¹²² As a result,

¹¹⁷ Nel and Du Plessis 2004 *SA Public Law* 183.

¹¹⁸ Refer to section 2 of the NEMA.

¹¹⁹ Kotzé "Environmental governance" 107-108.

¹²⁰ Paavola 2007 *Ecol Econ* 97.

¹²¹ Lemos and Agrawal 2006 *Annu Rev Environ Resour* 298.

¹²² Environmental governance in this sense occurs over a wider spectrum than state regulation, such as international accords, national policies and legislation, local decision-making structures, transnational institutions and environmental NGOs.

environmental governance emphasises collaboration, integration, participation, deliberative styles of decision-making, adaptation and learning between governments, NGOs, the private sector and civil society.¹²³ One could, therefore, infer that environmental governance is a participatory process. Environmental governance involves more actors that may join hands to realise sustainable and integrated environmental management (IEM) through different partnerships and co-regulation strategies.

The principle of sustainable development that underscores environmental governance raises the idea of IEM. Margerum¹²⁴ asserts that IEM is based on the conception that the environment has to be holistically managed. Born and Sonzogni,¹²⁵ on the other hand, state that "IEM is a response to much of traditional natural resource management, which has been largely reactive, disjointed, and for narrow or limited purposes". IEM, however, considers the environment as an entire system rather than certain elements or subcomponents,¹²⁶ acknowledges interconnections in both the physical and human systems,¹²⁷ is goal-oriented or focused on end points¹²⁸ and is strategic.¹²⁹ IEM from an environmental governance perspective can allow for self-regulation. The then Department of Environmental Affairs and Tourism (DEAT)¹³⁰ defined IEM as follows:

[It] provides a holistic framework that can be embraced by all sectors of society for the assessment and management of environmental impacts and aspects associated with each stage of the activity life cycle, taking into consideration a broad definition of environment and with the overall aim of promoting sustainable development.¹³¹

This definition indicates that the management of environmental impacts should be embraced by all sectors of civil society in a holistic framework that should span across

¹²³ Holley "Environmental regulation and governance" 742.

¹²⁴ Margerum 1999 *Environmental Management* 151-152.

¹²⁵ Born and Sonzogni 1995 *Environmental Management* 168.

¹²⁶ Slocombe 1993 *Environmental Management* 289-303.

¹²⁷ Moote *et al Principles of ecosystem management*.

¹²⁸ Moote *et al Principles of ecosystem management*.

¹²⁹ Born and Sonzogni 1995 *Environmental Management* 168.

¹³⁰ DEAT 2004 *Overview of integrated environmental management* 2. The DEAT is now known as the Department of Environment, Forestry and Fisheries.

¹³¹ Sustainable development as defined in section 1 of the NEMA read with the principles in section 2 of the Act. In this regard see Church 2012 *De Jure* 511-533; Feris 2010 *PER/PELJ* 73-99; and Murombo 2008 *South African Law Journal* 488-504.

an activity life cycle and emphasises sustainable development.¹³² Such a holistic framework of IEM has been developed by scholars to indicate partnerships and co-management strategies between the state, industry and the community stakeholders.¹³³ Nel and Du Plessis¹³⁴ argue that IEM could refer to an “alignment of environmental governance effort”.¹³⁵

IEM¹³⁶ is sometimes also referred to as “integrated environmental governance” (IEG) which pursues particular environmental management objectives contemplated in section 23(2)(b)-(e) of the NEMA.¹³⁷ The role of the state in environmental governance is to provide legislative direction to regulate and ensure compliant behaviour from all actors in terms its mandate contemplated in section 24 of the *Constitution*.¹³⁸ Environmental legal compliance could be realised when the organisation abides by regulations and standards but also when it decides to institute self-regulation by validating its level of compliance to conditions in its EAs, exemptions, directives,

¹³² See Church 2012 *De Jure* 511-533; Feris 2010 *PER/PELJ* 73-99; and Murombo 2008 *South African Law Journal* 488-504.

¹³³ See Magerman 1999 *Environmental Management* 151-166 and Nel and Du Plessis 2004 *SA Public Law* 183.

¹³⁴ Nel and Du Plessis 2004 *SA Public Law* 183. The authors define the concept of environmental governance where according to the authors the concept of environmental governance is defined to mean the collection of legislative, executive and administrative functions, processes and instruments used by any organ of state to ensure sustainable behaviour by all as far as governance of activities, products, services, processes and tools is concerned.

¹³⁵ See Glazewski and Posnik 2000 *The Journal of The South African Institute of Mining and Metallurgy* 211-220; Feris 2010 *PER/PELJ* 73-99; Church 2012 *De Jure* 511-531. IEM should be read with the principles of environmental management contemplated in section 2 of the NEMA.

¹³⁶ Nel and Du Plessis 2004 *SA Public Law* 183.

¹³⁷ Section 23(2)(b)-(e) of NEMA states that the general objectives of IEM “are to make arrangements to:

(a) identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts, maximising benefits, and promoting compliance with the principles of environmental management set out in section 2;

(b) ensure that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them;

(c) ensure adequate and appropriate opportunity for public participation in decisions that may affect the environment; and

(d) ensure the consideration of environmental attributes in management and decision-making which may have a significant effect on the environment, and identify and employ the modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management set out in section 2”.

¹³⁸ Refer to Chapter 3 for a discussion.

permits and licences to operate. It is, therefore, necessary to determine what self-regulation is. Self-regulation in the petrochemical industry is discussed next.

2.3 Self-regulation

2.3.1 The concept of self-regulation

Self-regulation “is not a precise concept ... it may be defined as a process whereby an organised group regulates the behaviour of its members”.¹³⁹ There is no fixed definition of self-regulation and it can be observed on a spectrum ranging from a detailed government command and control regulation to “pure” self-regulation, with different points in the continuum encapsulating various kinds of co-regulation.¹⁴⁰ In the interest of understanding environmental management from a self-regulatory perspective, the notion of self-regulation needs to be explored. Gunningham¹⁴¹ describes self-regulation as the controlling of a process or activity by the people or organisations that are involved in it rather than by an outside organisation such as government. The process or activity could be regarded as the conduct of the individual or organisation being regulated by themselves without interference from the state. Bartle and Vass¹⁴² describe self-regulation as:

the regulation of the conduct of individual organisations or groups of organisations by themselves, and entails that companies impose their own regulatory structure without any direct coercion from the relevant regulator in the particular community.

According to Porter and Ronit¹⁴³ self-regulation is:

an arrangement, involving formal or informal procedures, rules and norms, that is widely recognized as having the purpose of constraining the conduct of a set of private actors, where the procedures, rules and norms are shaped to a significant degree by some or all of these actors.

Bartle and Vass¹⁴⁴ indicate that self-regulation excludes state interference. On the other hand, Aalders¹⁴⁵ argues that self-regulation includes a degree of government

¹³⁹ OECD 1994 *Meeting on alternatives to traditional regulation* 7.

¹⁴⁰ Gunningham and Rees 1997 *Law and Policy* 363-414.

¹⁴¹ Gunningham 2011 <http://www.dol.govt.nz/whss/resources/investigation-industry-self-regulation-whss-nz.pdf>.

¹⁴² Bartle and Vass 2005 *CRI Research Report* 19.

¹⁴³ Porter and Ronit 2006 *Policy Sciences* 43.

¹⁴⁴ Bartle and Vass 2005 *CRI Research Report* 19.

¹⁴⁵ Aalders “Self-regulation and compliance with Environmental Law from a global perspective” 21-36.

involvement in regulation and that the concept is often used as “mandated”, “enforced” or even “regulated” self-regulation. These authors also refer to where the idea of cooperative regulation or co-regulation could also be considered.¹⁴⁶

From an EMS perspective, self-regulating organisations seem to be proactive, environmentally conscious, and their business initiatives are likely to go *beyond* compliance with environmental laws and regulations.¹⁴⁷ Krpan¹⁴⁸ asserts that the term “beyond compliance” is now commonly used to describe programmes implemented in organisations that seek to influence the attitudes of business and its performance, particularly in encouraging social responsibility. Self-regulation may, therefore, include processes and procedures beyond legislative requirements. Instruments for self-regulation include, for example, the International Organisation for Standardization’s (ISO) ISO 9001:2015¹⁴⁹ and ISO 14001:2015¹⁵⁰ as well as Responsible Care[®].¹⁵¹ Self-regulation may take one of three approaches:

- (a) Voluntary or total self-regulation: The industry establishes its own codes of practices, enforcement mechanisms and other instruments to regulate itself independent from any government regulation. This may occur in countries with weaker or no environmental regulation.¹⁵²
- (b) Mandatory partial self-regulation: Industry is responsible for *some* of the rules and their enforcement, but with over-riding regulatory specifications, though

¹⁴⁶ Bartle and Vass contend that “regulated” self-regulation does have government oversight.

¹⁴⁷ Krehbiel and Erekson 2001 *International Journal of Environmental Technology and Management* 106.

¹⁴⁸ Krpan 2011 *Compliance and Enforcement Review* 275.

¹⁴⁹ Refer to paragraph 2.3.5 below.

¹⁵⁰ Refer to paragraph 2.3.5 below. Du Plessis and Nel “Driving Compliance” 262. Du Plessis and Nel assert that ISO standards could be regarded as self-regulatory instruments in a new approach to environmental governance. Refer to Tables 2.3.1 and 2.4.1 in paragraphs 2.3.5 and 2.4.2 in that order below for a list of these and other environmental governance instruments.

¹⁵¹ Responsible Care[®] is the chemical industry’s own, unique, global initiative. It is a voluntary programme that helps it to raise its standards and win greater trust from the public as represented by the Chemical and Allied Industries’ Association (CAIA). See <https://www.caia.co.za/responsible-care/>. Also, refer to paragraphs 2.3.5 below. Du Plessis and Nel “Driving Compliance” 262. Du Plessis and Nel assert that ISO standards could be regarded as self-regulatory instruments in a new approach to environmental governance.

¹⁵² See Dean, Lovely and Wang 2005 https://surface.syr.edu/ecn/88/?utm_source=surface.syr.edu%2Fecn%2F88&utm_medium=PDF&utm_campaign=PDFCoverPages; Cashore, Auld and Newsom *Governing Through Markets*.

not the details, being mandated by the state.¹⁵³ Indirect state involvement in regulation occurs. This could be argued as a form of hybrid governance.¹⁵⁴

- (c) Mandated self-regulation: Direct state involvement where it is required from the industry to establish controls over its own compliance behaviour subject to state approval and/or oversight where the details of enforcement are left to the discretion of the industry; for example, environmental management plans (EMPs), air quality management plans (AQMPs), waste management plans (WMPs) and emergency management plans of organisations.¹⁵⁵

According to Short and Toffel¹⁵⁶ regulatory demand had increased in scope and complexity, having the effect that organisations turned to self-regulatory structures to show and facilitate legal compliance. Self-regulation in these instances is a workable voluntary option for environmental governance available to the industry. Some scholars argue that the implementation of self-regulatory practices within organisations is critical towards ensuring sustained legal compliance and realising its social goals in an increasingly complex national and international regulatory regime.¹⁵⁷ Self-regulation, therefore, strives for compliance with procedures, rules and norms where compliance denotes a strategy that "seeks to prevent harm rather than punish evil".¹⁵⁸

¹⁵³ Rees *Reforming the workplace* 9.

¹⁵⁴ See Ansell and Gash 2008 *Journal of Public Administration Research and Theory* 543-571; De Clercq 2002 *Negotiating environmental agreements in Europe* 9 and Mol, Volkmar and Liefferink *The voluntary approach to environmental policy: Joint environmental policy making in Europe*. Also, refer to paragraph 2.4 for a discussion on hybrid governance.

¹⁵⁵ Darnall and Carmin 2005 *Policy Sciences* 71-90. See also Chamberlain 2017 *Law Environment and Development Journal* 3-12. The author illustrates an example of hybrid environmental governance at Coal of Africa Limited (CoAL) in Mapungubwe where the sustainable development of mining activities in an ecologically sensitive area required an inventive approach to balancing conflicting interest of different stakeholders to ensure a sustainable outcome for all parties concerned. The notion of hybrid environmental governance through compromise, negotiation and the inclusion of the Vele Colliery Environmental Management Committee (EMC) to ensure legal compliance by CoAL to the conditions attached to its EA and an integrated water use licence (IWUL) presented a unique opportunity for a collaborative partnership that not only diffused expensive litigation but ensured environmental protection and the sustainable co-existence of mining operations with the community's socio-economic and other needs.

¹⁵⁶ Short and Toffel 2010 *Administrative Science Quarterly* 363.

¹⁵⁷ See Orts 1995 *North-Western University Law Review* 1227-1340; Ayres and Braithwaite *Responsive regulation*; Murray 1999 *American Business Law Journal* 35-71; and Lobel 2005 *Administrative Law Review* 1071-1152.

¹⁵⁸ Hawkins *Environment and Enforcement* 4.

The common feature of voluntary self-regulatory arrangements is to encourage firms to reduce their environmental impact.¹⁵⁹ This suggests a participative approach between governments, industries and NGOs as referred to above.¹⁶⁰ Van der Heijden¹⁶¹ indicates that these arrangements are reminiscent of the involvement of public and private sector stakeholders in (a) rule-making and rule implementation; (b) more collaborative policy processes; and (c) governance instruments that are less rigid, less prescriptive, less committed to uniform outcomes, foster experimentation, and are less hierarchical in nature. Accordingly, hierarchical government structures are increasingly giving way to different forms of self-organisation.¹⁶² In furtherance of self-regulation in the context of environmental governance, a theoretical basis for this approach is explored next.

2.3.2 A theoretical framework for self-regulation

A theoretical framework which might be used to understand the adoption of a voluntary approach to regulatory compliance through self-regulation can be found in institutional theory.¹⁶³ This school of thought suggests that self-regulatory arrangements can become institutionalised in organisations that accept them. In the process, real commitment to regulatory compliance and a set of practices to support this commitment are generated.¹⁶⁴ The adoption of self-regulatory compliance by the institution through the acceptance of appropriate governance structures and operational routines can promote the development of a “corporate conscience” towards governance.¹⁶⁵ The compliance appetite of an organisation may build its legal values and constraints into corporate practices and decision-making processes¹⁶⁶

¹⁵⁹ Fulton and Rejeski 2018 *Environmental Law Reporter* 10781. An early signal of a shift from traditional command and control regulation to “private environmental governance” in the US was with the launch of the US Environmental Protection Agency’s (EPA) 33/50 Programme in early 1991 to reduce the release of 17 high priority chemicals by 33% by the end of 1992 and by 50% by the end of 1995.

¹⁶⁰ Van der Heijden 2012 *Environmental Politics* 486.

¹⁶¹ Van der Heijden 2012 *Environmental Politics* 487.

¹⁶² Jordan, Wurzel and Zito “New’ instruments of environmental governance” 8. Hybrid environmental governance is such a form of self-regulation as discussed in paragraph 2.4.

¹⁶³ Misiūnė *Environmental Self-regulation* 41.

¹⁶⁴ Short and Toffel 2010 *Administrative Science Quarterly* 363.

¹⁶⁵ Short and Toffel 2010 *Administrative Science Quarterly* 363.

¹⁶⁶ Selznick *The Moral Commonwealth: Social Theory and the Promise of Community* 352.

which ultimately support the realisation of a compliance culture within such an organisation.

Short and Toffel¹⁶⁷ point out that research documented that this corporate conscience and subsequent compliance practices find their way into decision-making structures and routines taking cognisance of organisations' normative concerns, empowering constituencies in the organisation to reach certain normative outcomes, and external normative pressure¹⁶⁸ from either government or third-party stakeholders. To this end, self-regulatory structures through institutionalism can also result in demonstrable legal compliance.¹⁶⁹

Some researchers, however, argue that although institutional theory is the main theoretical framework advocated to investigate the role of environmental compliance in environmental management within the private sector, it does not fully uncover the complexity of environmental regulation.¹⁷⁰ From this basis one should take a more comprehensive theoretical view of organisational theories which provide the means to analyse the business activities of an organisation to assume a voluntary approach to regulation; that is (a) information theory, (b) stakeholder theory and (c) social network theory.¹⁷¹ The scope of this study did not necessitate an analysis of all the theories that underscore an organisation's environmental position towards self-regulation but to provide insight into a theoretical framework for self-regulation in general.

The theoretical framework for the adoption of self-regulation governance is highlighted by Misiūnė¹⁷² (see Figure 2.3.1 below) based on an organisational theory that embraces multiple perspectives.

¹⁶⁷ Short and Toffel 2010 *Administrative Science Quarterly* 363.

¹⁶⁸ Pressure from government and various stakeholders is indicative of organisations' motivation for adopting self-regulation as a tool for environmental management. Refer to the next paragraph for a discussion on the drivers of self-regulation.

¹⁶⁹ Short and Toffel 2010 *Administrative Science Quarterly* 364.

¹⁷⁰ Demirel, Iatridis and Kesidou 2018 *Journal of Environmental Management* 83.

¹⁷¹ Misiūnė *Environmental Self-regulation* 38.

¹⁷² Misiūnė *Environmental Self-regulation* 37.

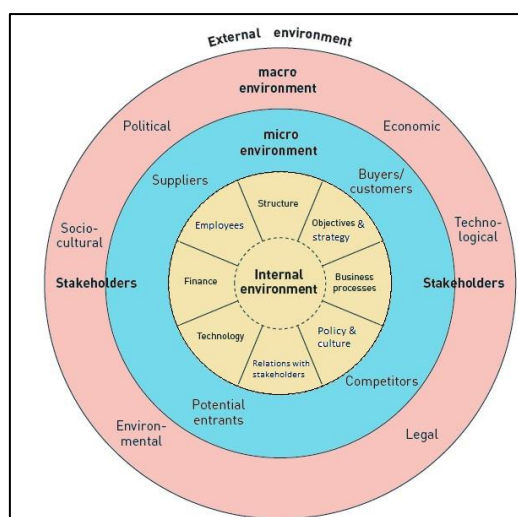


Figure 2.3.1: Environmental influences on the organisation¹⁷³

In terms of this framework, organisations are affected and pressurised by different factors in the *external*, *macro*-, *micro*- and *internal* environment to implement self-regulation. The internal circle represents the internal organisational environment made up of employees, its organisational structure, business objective and strategy, business processes, policy and internal culture, stakeholder relationship management, technology and finance. The internal environment can further be divided into micro- and macro-environment. In the micro-environment, the organisation is influenced by suppliers, buyers and customers, competitors and possible entrants into the market. Actors in the macro-environment consist of stakeholders representing, for example, politics, socio-economic culture, technology, government and the environment. Boddy¹⁷⁴ explains that the micro- and macro-environment make up a changing source of pressure and opportunities for the organisation. The internal environment is influenced by the external environment that includes, for example, the government, community, NGOs and customers. The role of stakeholders in the adoption of self-regulatory environmental management processes, as highlighted by Misiūnė,¹⁷⁵ could

¹⁷³ Adapted from Misiūnė *Environmental Self-regulation* 37.

¹⁷⁴ Boddy *Management: An introduction* 4th ed 84.

¹⁷⁵ Misiūnė *Environmental Self-regulation* 37.

provide a basis for a conceptual framework for environmental regulation within the private sector.

Ramanathan *et al*¹⁷⁶ developed a conceptual framework for environmental regulation through inductive case studies illustrated in Figure 2.3.2 below. The conceptual framework articulates the differences in the ability of an organisation to respond to regulatory pressures in a dynamic operational environment. By adopting self-regulation, companies may transform their regulatory mechanisms to reach positive win-win¹⁷⁷ outcomes leading to sustainability benefits for the organisation.¹⁷⁸

¹⁷⁶ Ramanathan *et al* 2017 *Journal of Cleaner Production* 79-92.

¹⁷⁷ Refer to the Porter-hypothesis discussed below. Also, see Gunningham and Grabosky *Smart regulation* 53.

¹⁷⁸ Ramanathan *et al* 2017 *Journal of Cleaner Production* 79-92.

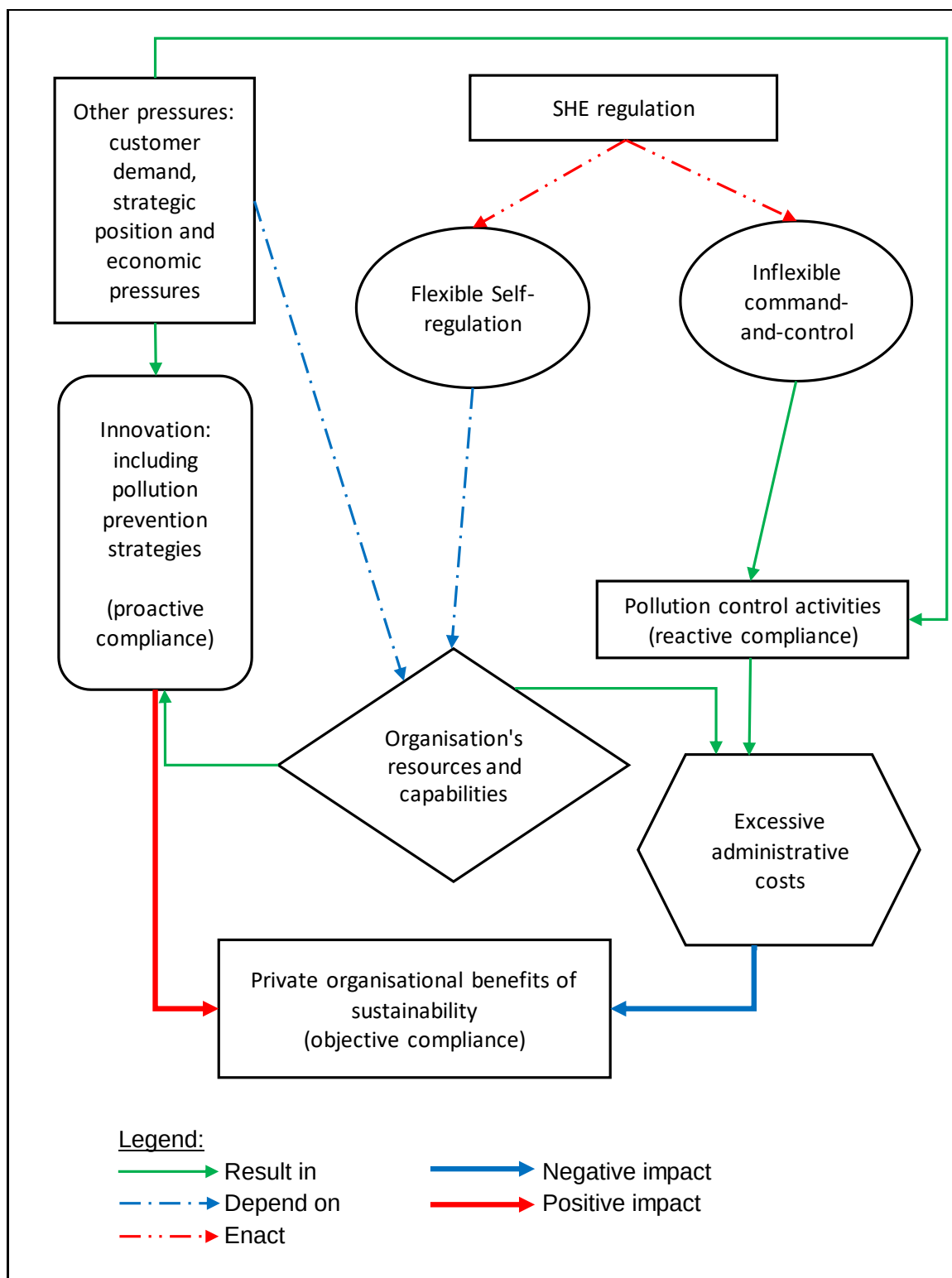


Figure 2.3.2: A conceptual framework for self-regulation¹⁷⁹

¹⁷⁹ Ramanathan *et al* 2017 *Journal of Cleaner Production* 88.

The conceptual framework of Ramanathan *et al*¹⁸⁰ shows the complex interconnections between environmental pressures on firms and their reactions, indicating excessive administrative cost associated with, for example, pollution control activities as one of an organisation's negative environmental impacts in Figures 2.3.1 and 2.3.2 above.¹⁸¹

Figure 2.3.2 above illustrates that an inflexible command and control regime may create a reactive approach to compliance in an organisation. On the other hand, an entity's resources and capabilities used to drive innovative pollution prevention strategies in a flexible self-regulation environment could result in proactive compliance strategies. Interestingly, the negative impact of environmental compliance on the organisation, as demonstrated in Figure 2.3.2, is the associated excessive administrative cost.¹⁸² The resources and capability within an organisation to enable self-regulation may result in proactive innovation, which may also create excessive administrative cost. This may have an impact on the drivers for the adoption of self-regulation in an organisation as discussed in the next paragraph.

2.3.3 Drivers for self-regulation

The fear of non-compliance or sanctions prompts industry to adopt its own intervention strategies on a risk-based approach to achieve regulatory compliance.¹⁸³ Consequently, organisations opt to provide governance assurance through the use of, for example, a Quality Management System (QMS), EMS and Occupational Health and Safety Management System (OHSMS). Appropriate certifications for the ever stricter environmental compliance or command and control mechanisms towards environmental legal compliance are also implemented.¹⁸⁴ The drivers for self-

¹⁸⁰ Ramanathan et al 2017 *Journal of Cleaner Production* 88.

¹⁸¹ The framework also indicates that environmental regulation is enabled in an organisation either through command and control or self-regulation. Both these approaches seek to achieve sustainable objective compliance through pollution control activities.

¹⁸² Pollution control actions may be activated by other pressures than those from stakeholders, such as customer demands, the strategic position of the organisation and economic pressures.

¹⁸³ See Aalders 1993 *Law and Policy* 75. Research suggests that organisations largely adopt self-regulatory programmes for fear of government regulation.

¹⁸⁴ Kagan, Gunningham and Thornton "Fear, duty and regulatory compliance: Lessons from three research projects" 37-58. The authors assert that compliance in organisations is influenced by the (i) fear of detection and punishment by government enforcement agents; (ii) fear of humiliation or disgrace in the eyes of family members or social peers (social license); and (iii) an internalised sense of duty, that is, the desire to conform to internalized norms and beliefs about the right thing to do.

regulation in the industry have been widely documented. Empirical research indicates that the requirements for companies to comply with direct environmental regulation encourage not only the adoption of self-regulatory mechanisms, but that their internal EMS is used as a means to reduce their environmental impact,¹⁸⁵ while in heavily regulated environments the need to adopt self-regulation does not seem to exist because command and control appeared to be sufficient.¹⁸⁶ Compliance with legal and other requirements¹⁸⁷ contained in internal procedures, policies and work instructions at an organisation to enhance its environmental performance is suggestive of a responsible institution with regard to environmental management initiatives.¹⁸⁸ The literature overall indicates the drivers for the adoption of self-regulation by organisations as being:

- (a) pressure from stakeholders;
- (b) regulatory pressure and inefficiency;
- (c) legal compliance;
- (d) cost benefits; and
- (e) incidents or accidents.

Moreover, literature seems to suggest that shareholders are increasingly requires organisations to be ISO 14001 certified for investment purposes focussing on:

- (a) increased investor confidence and giving company international competitive advantage;
- (b) customer pressure for environmental stewardship;
- (c) peer pressure among companies who are involved in the same business sector;
- (d) the growing interest of corporate stakeholders outside of a firm such as regulatory agencies, as well as

¹⁸⁵ Demirel, Iatridis and Kesidou 2018 *Journal of Environmental Management* 88.

¹⁸⁶ Potoski and Prakash 2017 *Pol Stud J* 273-294.

¹⁸⁷ See Chapter 3 for a discussion.

¹⁸⁸ ISO 14001:2015 defines environmental performance as a "measurable result" whereby a compliance audit could be such a measuring tool an organisation can use to assess its level of environmental compliance. The enhancement of environmental performance in an organisation could be achieved through the implementation of ISO 14001.

(e) insurance companies and financial institutions.¹⁸⁹

Likewise, Fryxell and Szeto¹⁹⁰ highlight improved regulatory compliance for organisations; increased market share; the firm's response to customer pressure and access to markets; and cost reductions from improved operational efficiencies as benefits for implementing ISO 14001.

(a) Pressure from stakeholders

The literature seems to suggest that pressure from stakeholders¹⁹¹ towards environmental protection gives rise to corporate adjustment in their management strategies to implement self-regulatory measures.¹⁹² The threat of state regulation and peer pressure felt by members of an industry association are also considered to be key driving forces behind self-regulation.¹⁹³ An organisation may adopt self-regulation as an environmental governance strategy due to external pressures, as indicated above.

Petrochemical companies operate in a space characterised by society's growing environmental awareness, the increasing power of and pressure from environmental NGOs, and the ever-present stricter environmental compliance framework which directs its current and future behaviour towards attempts for the formulation of a sustainable EMS.¹⁹⁴ Companies therefore resort to self-regulation as a result of the growing environmental awareness in society, the increasing power of environmental NGOs and the implicit threats.¹⁹⁵ An organisation's IEM strategy that seeks to go

¹⁸⁹ Morrow and Rondinelli 2002 *Euro Manag J* 159-71. Also see Perera, Weerasinghe and Narangoda 2017 *Environ Sci Ind J* 133-148.

¹⁹⁰ Fryxell and Szeto 2002 *J Environ Manage* 223-228.

¹⁹¹ See Fineman and Clarke 1996 *Journal of Management Studies* 715-730; Buysse and Verbeke 1998 *Strategic Management Journal* 453-470; and Garcés-Ayerbe, Rivera-Torres and Murillo-Luna 2012 *Management Decisions* 189-206.

¹⁹² Clemens and Douglas 2006 *Journal of Business Research* 483-491; Murillo, Garcé and Rivera 2008 *Strategic Management Journal* 1225-1240; Henriques and Sadorsky 1999 *Academy of Management Journal* 87-99; Nijkamp, Rodenburg and Verhoef 1999 *International Journal of Technology Management* 421-437; and Verbeke and Rugman 1998 *Strategic Management Journal* 363-375.

¹⁹³ The industry association for the chemical industry in South Africa is the Chemical & Allied Industries' Association (CAIA).

¹⁹⁴ See *Uzani Environmental Advocacy CC v BP Southern Africa (Pty) Ltd* 2017 ZAGPPHC 749 as discussed in Chapter 3.

¹⁹⁵ Pressure from regulators is further suggested as the most important factor guiding corporations into environmental protection actions to improve their green performance.

beyond regulatory compliance through the implementation of self-regulatory governance strategies as underpinned by institutional theory, and as discussed above, is a reaction to the effect of external forces such as stakeholder pressure and the inherent threat of command and control sanctions, referred to below.

(b) Regulatory pressure and inefficiency¹⁹⁶

Du Plessis and Nel¹⁹⁷ contend that the private sector argues that self-regulation is more rewarding than the "[h]eavy hand of over-regulation and command and control". Command and control have been described as overly rigid, unreasonable¹⁹⁸ and "suffocating".¹⁹⁹ Companies only comply when regulations are valid and are actually used by government officials as the authoritative guide for enforcement.²⁰⁰

Inherent weaknesses in the criminal justice system, a lack of resources within the state's regulatory functions, costs and time constraints,²⁰¹ inexperienced prosecutors in environment-related matters, the reactive nature of criminal law procedure, and problems to prove a matter before the court²⁰² prompt private organisations to pursue other options to attain environmental compliance.²⁰³

In developing countries, research suggests that regulatory enforcement and compliance are shaped by other contextual factors, such as weak government capacity and legitimacy,²⁰⁴ official corruption, and inadequate protection for private property rights.²⁰⁵ The reasons for industry's acceptance of self-regulation differ among countries and could be further prompted by a lack of skilled employees, governance

¹⁹⁶ See Henriques and Sadorsky 1999 *Academy of Management Journal* 87-99; Nijkamp, Rodenburg and Verhoef 1999 *International Journal of Technology Management* 421-437; and Buysse and Verbeke 1998 *Strategic Management Journal* 453-470.

¹⁹⁷ Du Plessis and Nel "Driving Compliance" 262.

¹⁹⁸ Bardach and Kagan *Going by the book: The problem of regulatory unreasonableness*.

¹⁹⁹ Howard *The death of common sense: How the law is suffocating America*.

²⁰⁰ Yee, Tang and Lo 2016 *Journal of Public Administration Research and Theory* 95.

²⁰¹ See *Feedmill Developments (Pty) Ltd v Attorney General, Kwa-Zulu Natal* 1998 4 ALL SA 34.

²⁰² Kidd 2011 *Environmental Law* 271.

²⁰³ See Lehmann "Voluntary Compliance Measures" 269-295. Lehmann claims that the threat of sanctions within a command and control regulatory regime is both the law's strength and weakness whereas lack of financial and human resources within environmental enforcement authorities world-wide is highlighted as some of the challenges.

²⁰⁴ See Levi and Sacks 2009 *Regulation & Governance* 311-333; Yee, Tang and Lo 2016 *Journal of Public Administration Research and Theory* 95.

²⁰⁵ Yee, Tang and Lo 2016 *Journal of Public Administration Research and Theory* 95.

expertise and the capacity to address environmental concerns within the required legal framework, failure to prosecute offenders, the actual cost of command and control, and the bureaucracies of command enforcement.²⁰⁶ From the institutional theory model where legislation, rules and regulations are instituted as authoritative guidelines to drive environment-compliant behaviour, the petrochemical industry construes their voluntary regulatory initiatives as either mimetic or self-regulated where the latter is associated with benefits.²⁰⁷

(c) Legal compliance

Self-regulatory governance instruments may be used as a mechanism for avoiding liability or to justify the mitigation of penalties.²⁰⁸ The petrochemical industry is mindful of the impact of its operations on the environment and surrounding communities. It is therefore important for self-regulation to strike a balance between the private interest of the industry to make a profit and the public interest in environmental protection.²⁰⁹ Compliance with all applicable environmental legislation is observed as mandatory by the industry in its quest to ensure proper environmental governance, assurance and risk management. Legal non-compliance is one of the core risks in the overall risk profile of a petrochemical company. It is therefore not only committed to identifying the required legislation framework²¹⁰ which its operations have to observe

²⁰⁶ Jordan, Wurzel and Zito "New instruments of environmental governance: Patterns and pathways of changes" 27-198.

²⁰⁷ Evangelinos, Nikolaou and Karagiannis 2010 *Journal of Hazardous Materials* 823. Also, see Aalders 1993 *Law and Policy* 75. Levi and Sacks 2009 *Regulation & Governance* 311-333. Also see, Lehmann "Voluntary Compliance Measures" 269-295 and Kidd 2011 *Environmental Law* 271. Also see *Feedmill Developments (Pty) Ltd v Attorney General, Kwa-Zulu Natal* 1998 4 ALL SA 34. In *Feedmill* the inherent weaknesses in the criminal justice system, lack of resources within the State's regulatory functions, costs and time constraints could also be indicative of drivers for self-regulatory practices. Furthermore, Kidd suggests that inexperienced prosecutors in environmental related matters, the reactive nature of criminal law procedure, and problems to prove a matter before the court could prompt self-regulation while Aalders indicates that prompt private organisations to pursue other options to achieve environmental compliance could also be factors for the adoption of self-regulatory governance.

²⁰⁸ See Gunningham and Grabosky *Smart regulation* 177.

²⁰⁹ Gunningham and Sinclair *Leaders and laggards: Next-generation environmental regulation* 145-148 and 155; Freeman and Faber 2005 *Duke Law Journal* 831-832.

²¹⁰ See Nel and Alberts "Environmental Management" 21. Also, the researcher's own experience. Different tools in the industry are used for the purpose of listing required legislation that directly or indirectly influences operations which are then compiled in a legal register. The company where the researcher is employed updates its legal register on a quarterly basis through a legal alert, however, high ranking legislative changes are implemented immediately or as soon as business processes allow. A SHE legal governance and assurance framework was established to provide guidance with regard to the implementation and maintenance of SHE legal compliance within the organisation and set out the approach to managing SHE legal compliance risks proactively within a prevailing compliance culture.

and provide assurance to, but also to monitor continually the levels of legal compliance in the organisation in favour of the implementation of appropriate mitigation strategies where necessary.²¹¹

Self-regulation also brings other benefits in terms of predictive analysis of possible non-compliance trends to support effective risk mitigation strategies as part of its overall continual improvement towards proactive environmental compliance. Proactive compliance through sophisticated corporate strategies “can look ahead to the next wave of likely regulations, and attempt to take proactive steps to shape future laws, rather than passively waiting for regulations to be imposed upon them”.²¹² Firms that apply self-regulatory environmental governance may be able to pre-empt future regulations altogether with just enough rigour to appease environmentalists and head off the demand for government regulation.²¹³

A theoretical model of industry self-regulation presented by Lyon, Maxwell and Hackett,²¹⁴ adopted by the regulatory community under the threat of government regulation, finds that business can pre-empt the regulatory threat. Also, more importantly, industry can improve social welfare in the process, thus being proactive. Proactive legal compliance is a significant benefit of voluntary self-regulation in the petrochemical industry as companies may pre-empt and mitigate possible future non-compliances.

(d) Cost benefits

Proactive compliance and flexibility result in an improvement of the regulatory efficiency in the company which is greater in a self-regulatory instrument in comparison with firm command and control regulations.²¹⁵ Similarly, favourable

²¹¹ Own experience.

²¹² Lyon and Maxwell “Voluntary’ approaches to environmental regulation: A survey” 10.

²¹³ Lyon and Maxwell “Voluntary’ approaches to environmental regulation: A survey” 10.

²¹⁴ Lyon, Maxwell and Hackett 2000 *The Journal of Law and Economics* 583-618. The authors contend that the model for proactive compliance depends on certain assumptions, that:

- (a) it is costly for members of the public to organize and lobby for regulation;
- (b) the public receives reliable and up-to-date information about industry performance;
- (c) the industry can make a credible commitment to abatement; and
- (d) if the extent of self-regulation is not satisfactory, the public retains the ability to mobilize and press for even more stringent regulation.

²¹⁵ Valero-Gil, Rivera-Torres and Garcés-Ayerbe “Sustainability” 4.

production costs and increased profitability are added benefits of self-regulation. In any petrochemical company cost as a component of the regulatory design is an expense always to be taken into account. Cost reduction and subsequent cost containment strategies for any company is a concern and the literature on EMSs argues that firms that choose any form of voluntary self-regulation are primarily interested in reducing their production cost and improving operational efficiency.²¹⁶

Porter and Van der Linde²¹⁷ argue that a properly designed regulatory framework to provide for an appropriate level of flexibility may prompt cost-saving innovation that may exceed compliance costs. A firm's environmental and financial performance can improve its impact on innovation through effective and innovative regulation.²¹⁸ This notion has become known as the Porter Hypothesis which represents a win-win solution for all stakeholders.²¹⁹ Nel and Wessels²²⁰ claim that self-regulation is more cost-effective than government regulation. Learning from the Porter Hypothesis, a company's environmental strategy aligned with its business strategy does not only respond to the pressure of environmental legislation in general but it also appeals to its stakeholders in particular.²²¹

(e) Incidents and accidents

Incidents²²² in the petrochemical sector prompted the industry to review its internal administrative mechanisms to prevent harm to people and the environment in which

²¹⁶ Darnall, Henriques and Sadowsky 2008 *Journal of International Management* 364-376; King and Lenox 2001 *Academy of Management Proceedings* A1-A6; Baek 2017 *Journal of Business Ethics* 325-336; Kidd *The protection of the environment through the use of criminal sanctions* 279-280; Nel and Wessels 2010 *PER/PELJ* 53.

²¹⁷ Porter and van der Linde 1995 *Harvard Business Review* 120-134; Porter and van der Linde 1995 *Journal of Economic Perspectives* 97-118.

²¹⁸ Porter and van der Linde 1995 *Harvard Business Review* 120-134; Porter and van der Linde 1995 *Journal of Economic Perspectives* 97-118.

²¹⁹ Porter and van der Linde 1995 *Harvard Business Review* 120-134; Porter and van der Linde 1995 *Journal of Economic Perspectives* 97-118.

²²⁰ Nel and Wessels 2010 *PER/PELJ* 53.

²²¹ Valero-Gil, Rivera-Torres and Garcés-Ayerbe "Sustainability" 4.

²²² Dwarika *A comparative study of Responsible Care and ISO 14001* 3. Examples of major incidents in the petrochemical sector globally include:

- (a) In 1947 a French ship was being loaded with ammonium nitrate fertilizer in Texas, USA when it caught alight. The steam, used to extinguish the fire, caused the ship to explode killing 576 people and injuring 3500 people;
- (b) A series of explosions at a BP Refinery in Texas, the USA in 2005 occurred when a hydrocarbon isomerization unit was restarted and a distillation tower became flooded with hydrocarbons. The incident resulted in 15 people killed and 180 injured;

they operate. Responsible Care[®] was initially developed by the chemical industry to avoid potential government regulations after the Bhopal accident in December 1984 where over 500 000 people were exposed to methyl isocyanate gas due to a gas leak in Madhya Pradesh, India.²²³

Accidents and incidents related to the chemical industry could be quantified in terms of injuries, fatalities and in some instances environmental impacts in particular circumstances.²²⁴ The growing awareness about environmental governance and the promotion of sustainable development emanating from a concern about the impact of human activity on the preserve of the earth and its systems require the industry to apply a collaborative approach to environmental governance.²²⁵ The impact of human activity has never been scientifically calculated or quantified to determine a safe operating space for humankind with regard to the functioning of Earth Systems until 2009. The influential work by Rockström *et al*²²⁶ determined planetary boundaries to

-
- (c) An explosion at a chemical factory in the city of Jilin, China in November 2005, resulted in an 80 km stretch of benzene flowing down the river to the north-eastern city of Harbin. Around 100 tons of pollutants flowed into the Songhua river in a chemical spill that forced a Chinese city to cut off water supplies to almost four million people. The toxic chemicals continue to flow in the river towards Russia;
 - (d) In Flixborough in the UK in 1974 a cyclohexane vapour explosion resulted in deaths of 28 people and 36 injured. The incident prompted the creation of new legislation in health and safety in the UK;
 - (e) In September 2001 in the French town of Toulouse a devastating chemical explosion at the AZF fertilizer factory caused the death of 29 people and a total of 2 400 were injured, most of them with cuts arising from splintered, flying glass;
 - (f) A nuclear disaster at Fukushima, the near-meltdown at Three Mile Island, the explosion of BP's Deepwater Horizon rig, the oil spill from the Exxon Valdez, the release of methyl isocyanate from Union Carbide's plant in Bhopal, and the discovery of toxic waste under the town of Love Canal;
 - (g) A devastating oil leak in the Gulf of Mexico on an oil rig owned by BP had a detrimental effect on the environment;
 - (h) A gas explosion at the Sasol Secunda plant, Mpumalanga in 2004 killing 6 and injuring more than 100 employee and the uncontrolled release of sulphuric acid mist in 2002 at Foskor;
 - (i) A fertilizer factory in Richards Bay, KwaZulu-Natal where more than 100 people were affected; and
 - (j) A tailings dam of Vale and BHP Billiton joint venture mining company containing mining waste collapse on 5 November 2015 in Brazil killing 19 people and discharged 40 million litres of waste. See <https://www.theguardian.com/world/2018/feb/28/brazil-dam-collapse-samarco-fundao-mining>

²²³ Delmas and Montiel 2008 *The Policy Studies Journal* 66.

²²⁴ Own experience in the petrochemical sector.

²²⁵ See Rockström *et al* 2009 *Nature* 472-475. See also <https://www.ecologyandsociety.org/vol14/iss2/art32/>.

²²⁶ Rockström *et al* 2009 *Nature* 472-475. See also <https://www.ecologyandsociety.org/vol14/iss2/art32/>.

define such safe space for human development which influences the traditional approach to environmental governance and management to minimise negative externalities. The safe space for human development as identified by the scientists is illustrated as nine natural Earth System processes with clear boundaries that mark these safe zones for the planet. The nine identified boundaries as illustrated in Figure 2.3.3 below are climate change, ocean acidification, stratospheric ozone depletion, biochemical flow boundary (nitrogen and phosphorus cycle), global freshwater use, change in land use, rate of biodiversity loss, atmospheric aerosol loading and chemical pollution. The last-mentioned has not yet been quantified.²²⁷ Refer to Figure 2.3.3 below:

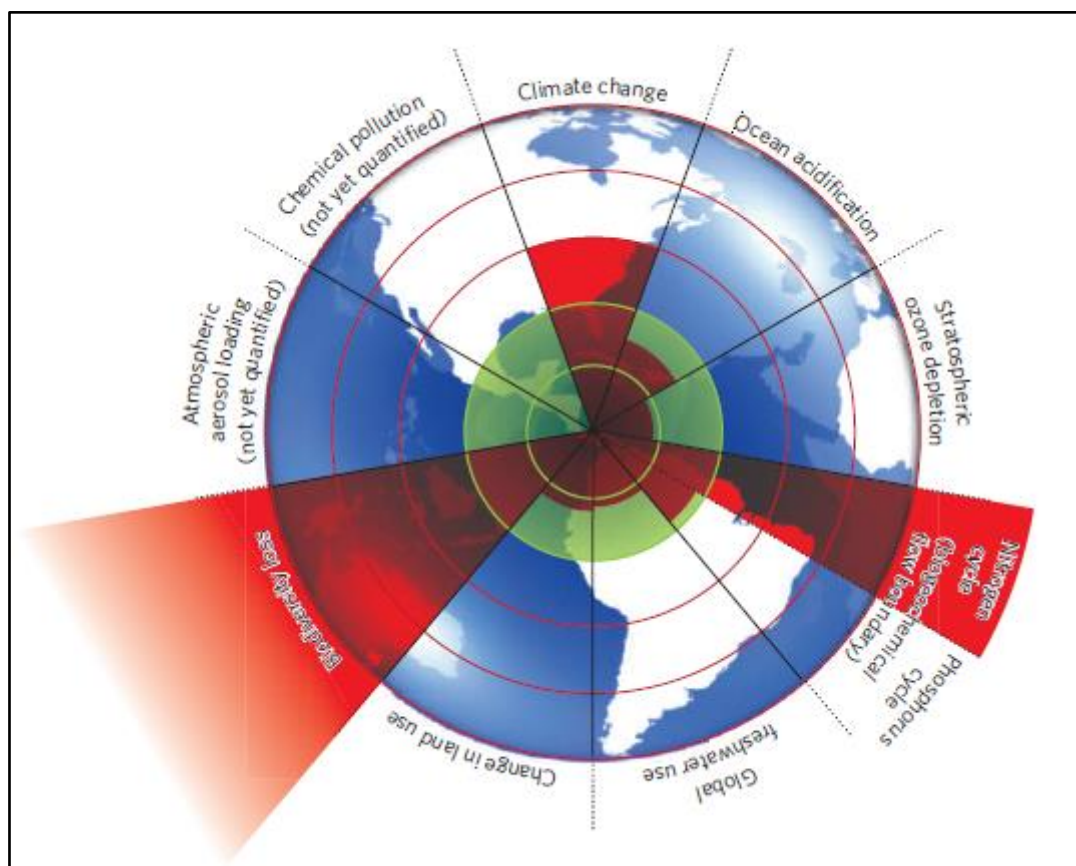


Figure 2.3.3: Planetary boundaries for safe human development²²⁸

²²⁷ Rockström *et al* 2009 *Nature* 472. See also <https://www.ecologyandsociety.org/vol14/iss2/art32/>.

²²⁸ Rockström *et al* 2009 *Nature* 472. See also <https://www.ecologyandsociety.org/vol14/iss2/art32/>.

Where human activity crosses these boundaries, it could potentially produce sudden and even irreversible environmental changes for the earth as it has entered a new era called the Anthropocene²²⁹ from a relatively stable environment of the Holocene.²³⁰ The inner green shading of the model above (Figure 2.3.3) represents the proposed safe operating space for nine planetary systems while the red wedges represent an estimate of the current position for each variable.²³¹ The significance of this research for this study is that the findings estimate that three of the boundaries have been crossed.²³² The boundaries in three systems, that are (a) rate of biodiversity loss, (b) climate change²³³ and (c) human interference with the nitrogen cycle, have already been exceeded.²³⁴

The increased awareness of the impact of human development on sustainability and the protection of the natural environment for current and future generations as well as the new paradigm in environmental governance create a unique opportunity for the petrochemical sector to explore alternatives towards self-regulation governance solutions within an IEM approach. Self-regulatory instruments adopted in the petrochemical industry could embody a new environmental governance framework to offer additional assurance to counter the risk of non-compliance with command and control instruments in pursuance of achieving sustained, reliable and demonstrable legal compliance.²³⁵ The next section focuses on the limitations of self-regulation.

²²⁹ The Merriam Webster Dictionary defines the "Anthropocene" as: "[t]he period of time during which human activities have had an environmental impact on the Earth regarded as constituting a distinct geological age". Bonneuil and Fressoz regard the "Anthropocene is... the new epoch of humans, the age of man". See Bonneuil and Fressoz 2016 *The Shock of the Anthropocene: The Earth, History and Us* 16.

²³⁰ Rockström *et al* 2009 *Nature* 472-475. See also <https://www.ecologyandsociety.org/vol14/iss2/art32/>. Walker *et al* 2009 *Journal of Quaternary Science* 3-4. The author contends that the Holocene (meaning 'entirely recent') is the name given to the most recent interval of Earth history, which extends to and includes the present day.

²³¹ Rockström *et al* 2009 *Nature* 472.

²³² See Figure 2.3.3.

²³³ At the time of the study the *Carbon Tax Bill* [B46-2018] was tabled in Parliament. The bill acknowledges the link between an increasing of anthropogenic greenhouse gas emissions in the atmosphere and the global climate change which has been scientifically confirmed. The aim of the Bill is "To provide for the imposition of a tax on the carbon dioxide (CO₂) equivalent of greenhouse gas emissions, and to provide for matters connected therewith". The Bill is now referred to as the *Climate Tax Act* 15 of 2019 after it was signed into law by the President of the Republic of South Africa.

²³⁴ Rockström *et al* 2009 *Nature* 472.

²³⁵ Hybrid forms of self-regulation could be such an alternative. See paragraph 2.4 for a discussion.

2.3.4 Limitations of self-regulation

From a governance perspective,²³⁶ it seems unlikely that pure self-regulation will perform well without continuing government oversight.²³⁷ Such government oversight by the state in the event of a self-regulatory failure in a particular organisation could reduce the threat of direct intervention.²³⁸ Likewise, self-regulation suffers from a lack of credibility because of the absence of strict enforcement mechanisms characterised by command and control. The lack of sanctions and the non-existence of a robust monitoring intervention were indicated by some of the sceptics of self-regulation.²³⁹

Demirel, Iatridis, and Kesidou²⁴⁰ argue that there is overall scepticism in the literature about the environmental protection potential of self-regulation to substitute command and control regulation. These authors reason that meta-analyses indicate that companies who adopted self-regulation did not perform better than non-adopters. Such companies are likely to serve their own interest where self-regulation "[o]ften fails to fulfil its theoretical promise and commonly serves the industry rather than the public interest".²⁴¹ Braithwaite²⁴² articulates this position accurately:

Self-regulation is frequently an attempt to deceive the public into believing in the responsibility of an irresponsible industry. Sometimes it is a strategy to give the government an excuse for not doing its job.

Gunningham and Sinclair²⁴³ indicate that according to the critics, self-regulatory standards espoused by industry are usually weak, enforcement of these standards is ineffective and punishment is secret and mild. The authors also claim that self-regulation commonly lacks many of the benefits of conventional state regulation and that it is usually not as visible or credible. Self-regulation, thus, does not provide the same degree of industry accountability, and it is usually lacking in rigorous application and strong sanctions.²⁴⁴

²³⁶ See paragraph 2.4 below.

²³⁷ Gunningham and Grabosky *Smart regulation* 55.

²³⁸ Gunningham and Grabosky *Smart regulation* 55.

²³⁹ Li, Khanna and Vidovic 2018 *J Regul Econ* 332.

²⁴⁰ Demirel, Iatridis and Kesidou 2018 *Journal of Environmental Management* 82.

²⁴¹ Gunningham and Grabosky *Smart regulation* 53.

²⁴² Braithwaite "Responsive business regulatory institutions" 91.

²⁴³ Gunningham and Grabosky *Smart regulation* 53.

²⁴⁴ Gunningham and Grabosky *Smart regulation* 53.

Another weakness of self-regulation is that its effectiveness can only be enhanced by establishing robust, independent, third-party certification like ISO 14001:2015.²⁴⁵ Without a robust EMS certification and multi-stakeholder input self-regulation may serve as a form of “greenwash”²⁴⁶ or as symbolism without substance.²⁴⁷ Self-regulation within complex multi-national chemical companies will only be beneficial where such companies form part of corporate trade associations. The International Council of Chemical Associations (ICCA) represents a worldwide channel for the chemical industry.²⁴⁸

Associated regulated corporations are mutually interdependent and some degree of participation is necessary to take full advantage of its regulatory practices which can lead to regulatory capture by those industries.²⁴⁹ In these circumstances, the risk of collusion is always present due to the interdependent nature of the interaction between associated members²⁵⁰ that is likely to impinge on the behavioural change of such members, for example with regard to pollution prevention.²⁵¹

Self-regulation is always associated with the cost of implementation and executing the self-regulatory management process and its subsequent certification.²⁵² Gunningham and Sinclair²⁵³ contend that there are substantial limits to the contribution of self-regulation and that “[t]he greater the nexus between environmental improvement and increased costs, the greater the incentive to renege on self-regulation objectives”.²⁵⁴

²⁴⁵ Li, Khanna and Vidovic 2018 *J Regul Econ* 332.

²⁴⁶ Lyon and Maxwell 2011 *Journal of Economics and Management Strategy* 3-41.

²⁴⁷ Delmas and Montes-Sancho 2010 *Strategic Management Journal* 575-601; Lyon and Maxwell 2011 *Journal of Economics and Management Strategy* 3-41.

²⁴⁸ See <https://www.icca-chem.org/>.

²⁴⁹ Makkai and Braithwaite 1992 *Journal of Public Policy* 61-78.

²⁵⁰ Camison-Zornova and Boronat-Navarro 2010 *Environmental and Planning C: Government and Policy* 740.

²⁵¹ Hahn 1989 *Journal of Economic Perspectives* 95-114 and Lehmann “Voluntary compliance measures” 280. The authors assert that to counter this inclination Hahn offers that the charges for pollution emissions above the set standards must be very high and directly related to the specific actions of the company or, critics suggest if the association is willing to expel transgressors in addition to the expense of state environmental compliance. State environmental compliance costs may include administrative costs of licence applications and reporting, legal costs of negotiation and enforcement proceedings, costs of installing compliance technologies, increased costs of environmental liability insurance, and rapidly rising costs of waste disposal services.

²⁵² Refer to paragraph 2.3 above.

²⁵³ Gunningham and Grabosky *Smart regulation* 55.

²⁵⁴ The execution of self-regulatory management practices is a co-ordinated process and require support from different sections within a company that effects production schedules and targets.

The associated cost could, therefore, be considerable for companies which may decrease their disposition and willingness to implement such a system.²⁵⁵ Smaller companies may not have the same capital capacity as their larger counterparts to implement self-regulatory practices due to the high overheads associated with, amongst others, the required skilled personnel, the correct information management systems (IMSs) and software licensing, internal and external auditing, certification, incentives, consulting fees, communication and mobilisation, statutory inspections and compliance monitoring.²⁵⁶ Companies' motivation for the adoption of self-regulation is driven by the rationale to reduce actual costs or to avoid future ones.²⁵⁷ Ultimately, a petrochemical company is in business for profit by using its ability to respond to market conditions, to stay in business and maintain its competitive advantage, and to reduce its carbon footprint.

2.3.5 Instruments for self-regulation

The literature suggests that ISO 9001, ISO 14001 and OHSAS 18001 or ISO 45001 voluntary self-regulation instruments belong to the three most widely applied certifications in the manufacturing industry.²⁵⁸ These standards, as well as Responsible Care[®], are briefly summarised in Table 2.3.1 below:

²⁵⁵ Ashton *et al* 2001 *Impact of mining and mineral processing operations on water resources and water quality in the Zambezi*.

²⁵⁶ Own experience. Additional resources are required to cross-check data which again increase the cost-effectiveness of self-regulation that contradicts the rational choice perspective why companies essentially choose to engage in self- as well as in co-regulation efforts.

²⁵⁷ Hönke *et al* 2014 *Fostering Environmental Regulation?* 27.

²⁵⁸ Wiengarten *et al* 2017 *Production Planning and Control* 132.

Table 2.3.1: Instruments for self-regulation

Instrument	Origin	Objectives	Outcomes
Responsible Care®	Chemical industry EMS originated in Canada in 1985 and the USA in 1998. ²⁵⁹	To allow petrochemical companies to commit themselves to be more open in their communication with regard to their business activities, their achievements and footprint.	Chemical manufacturers commit to pursuing an ethic of safe chemicals management and performance excellence.
ISO 9001:2015	The standard was first published in 1987 and underwent major changes in 2002 and 2008 with the latest version published in September 2015.	To acquire the consistent production of high-quality products. ²⁶⁰	To obtain product uniformity and compliance with the specifications established by the client. ²⁶¹
ISO 14001:2015	ISO 14001 is a generic EMS ²⁶² that was launched in 1996 and revised in 2004 and 2015. ²⁶³	To provide organisations with a framework to protect the environment and respond to changing environmental conditions in balance with socio-economic needs. ²⁶⁴	To provide value for the environment, the organization itself and interested parties. ²⁶⁵
OHSAS 18001:2007	Developed as a British Standard in 2004 to satisfy the pressure from organisations around the globe to have a common standard to benchmark their OH&S.	Provides the requirements for an OHSMS that allows an organisation to control its risks of accidents and occupational diseases and improve its performance. ²⁶⁶	To implement an OHSMS.
ISO 45001:2018	Published to replace OHSAS 18001. ²⁶⁷	To provide a framework for managing occupational health and safety risks and opportunities within an organisation.	To prevent work-related injuries and ill health to employees and provide safe and healthy workplaces by eliminating hazards and minimize OH&S risks by taking effective preventive and protective measures. ²⁶⁸

²⁵⁹ Evangelinos, Nikolaou and Karagiannis 2010 *Journal of Hazardous Materials* 822.

²⁶⁰ Matias and Coelho 2002 *International Journal of Product Research* 3857-3866. See Marimon, Heras and Casadesús 2009 *Total Quality Management and Business Excellence* 2-3 for historical development of ISO 9000.

²⁶¹ Abbott and Snidal 2001 *Journal of European Public Policy* 345-370; Gunningham and Grabosky *Smart regulation* 174.

The instruments for self-regulation in an organisation to allow for the implementation of self-regulatory conduct within its operations (highlighted in Table 2.3.1 above) are restricted in the context of defined rules through environmental management and other legislation, appropriate enforcement of non-compliance, and adjudication. Environmental governance for the purposes of this study infers self-regulation to ensure compliance in the petrochemical industry.²⁶⁹

Also, the literature indicates that command and control regulation is not effective for environmental protection, and pure self-regulation without any form of external state

²⁶² Gunningham and Grabosky *Smart regulation* 174. The European equivalent of ISO 14001 is the Eco-Management and Audit Scheme (EMAS).

²⁶³ Marimon, Heras and Casadesús 2009 *Total Quality Management and Business Excellence* 2-3 for historical development of ISO 14000; King and Lenox 2001 *Production and Operations Management* 244-257. Also, see Potoski and Prakash 2005 *Journal of Policy Analysis and Management* 745-769; Gunningham and Grabosky *Smart Regulation* 174.

²⁶⁴ In terms of the ISO 14001:2015 standard an organisation has to make a commitment to manage and ensure legal compliance. The most important clauses with regard to legal compliance are the following EMS elements:

- (a) a public environmental policy commitment to the fulfilment of compliance obligations as per clause 5(2)(d);
- (b) understanding the needs and expectations of interested parties, which may lead to compliance obligations required by clause 4(2);
- (c) clause 6(1)(3)(a) which refers to the identification and having access to applicable legal requirements and other requirements related to its environmental aspects;
- (d) how those legal requirements apply to the organisation's environmental aspects in terms of clause 6(1)(3)(b);
- (e) objectives/targets/programmes of the organisation in clause 6(2)(1);
- (f) clauses 8(1) and 9(1)(1) that require the routine managing and maintenance of legal obligations;
- (g) evaluation of compliance obligations as required by clause 9(1)(2);
- (h) the organisation is required to reliably communicate with external stakeholders where required by its compliance obligations as per the provisions of clause 7(4)(3);
- (i) clauses 9(1)(2)(b) and 10(2) prescribe corrective actions where necessary;
- (j) internal legal audits are required by clause 9(2)(2); and
- (k) management review at the organisation is a requirement in terms of clauses 9(3)(b), (c), (d) and (f).

²⁶⁵ In terms of ISO 14001:2015 the intended outcomes of an EMS include:

- (a) enhancement of environmental performance;
- (b) fulfilment of compliance obligations; and
- (c) achievement of environmental objectives.

²⁶⁶ De Faria Nogueira *et al* 2015 *International Journal for Quality Research* 125.

²⁶⁷ Organisations that are certified in terms of OHSAS 18001:2007 has three years from March 2018 to migrate to the new ISO 45001:2018.

²⁶⁸ This requirement is in line with section 8 of the *Occupational Health and Safety Act*, 85 of 1998 (hereafter the OHSA). Also, see paragraph 4.4 in Chapter 4.

²⁶⁹ See paragraph 2.3.1 above. However, due to its inherent limitations, an alternative "new" hybrid environmental governance approach is therefore offered as discussed in paragraph 2.4 below.

intervention is uncommon.²⁷⁰ Similarly, recent developments in environmental policy and law suggest that governments are considering innovative alternatives to the traditional state-led command and control means towards environmental governance and law enforcement.²⁷¹

Learning from the limitations of self-regulation above, total self-regulation with no government oversight in the petrochemical industry within the present purpose and purview of environmental law, regulation and governance does not seem possible. Within the context of governance, it is therefore unlikely to ensure environmental protection with command and control on the one hand and self-regulation on the other. In terms of clause 5.2 of ISO 14001:2015 the top management of an organisation:

... shall establish, implement and maintain an environmental policy that, within the defined scope of its environmental management system... includes a commitment to the protection of the environment, including prevention of pollution and other specific commitment(s) relevant to the context of the organisation.

This commitment contemplated in clause 5.2 above aligns with the intention of section 24 of the *Constitution*.²⁷² Further hereto, the literature supports the view that environmental governance could function from a collaboration between command and control and self-regulation towards "smart regulation".²⁷³ This approach could ensure effective environmental protection with a suggestion that the certification of companies can provide a solution to problems of irregularities, thus "separating the good apples from the bad".²⁷⁴ The notion of hybrid environmental governance is therefore discussed next.

²⁷⁰ Gunningham and Grabosky *Smart regulation* 51. See paragraph 2.2 above for a discussion on the limitations of command and control regulation.

²⁷¹ Du Plessis and Nel "Driving compliance" 261. Refer to paragraph 2.2.2 above for a discussion on governance.

²⁷² See Chapter 4 for a discussion.

²⁷³ Gunningham and Grabosky *Smart Regulation* 174.

²⁷⁴ Demirel, Iatridis and Kesidou 2018 *Journal of Environmental Management* 88.

2.4 Hybrid environmental governance

Hybrid environmental governance presupposes a decentralised and resolute approach to the sharing of responsibilities and resources toward environmental management between the state and the regulated community. This approach to what is also called "smart regulation" refers to a form of regulatory diversity that embraces flexible, imaginative and innovative forms of control²⁷⁵ with a shared responsibility between different actors to find solutions for complex environmental problems in a cooperative and sustainable manner.²⁷⁶ It is my view that the rapid change in the chemical industry, ever-increasing customer demands, new innovative technologies and the ever-increasing possibilities of chemical building blocks are sometimes too advanced for regulatory development to provide policy and regulatory assurance, leaving regulatory gaps.²⁷⁷ Cooperation between the state, industry and society is, therefore, an integral part of any self-regulatory effort.²⁷⁸ Where these actors put their resources together to reach a single objective of IEM as opposed to conflicting needs and concerns, more could be accomplished in terms of environmental protection.

In a hybrid arrangement, the Confederation of Netherlands Industry and Employers²⁷⁹ asserts that:

... action should be voluntary, for reasons of both principle and practicality. In principle, the government's role should be to create an environmental framework From a practical point of view, it would simply not be feasible for the government to legislate on how companies should organize their internal operations.

Hybrid environmental governance seeks to balance the collective interest of different actors within the objective of environmental protection. This collective interest includes the protection of the environment for future generations to bring about sustainability which can be a shared responsibility between hybrid regulators, where such multi-stakeholder groups can be considered as "the most important civil

²⁷⁵ Gunningham and Sinclair "Smart regulation" 133.

²⁷⁶ Du Plessis and Nel "Driving compliance" 259.

²⁷⁷ Own experience.

²⁷⁸ See paragraph 2.2 for a detailed discussion.

²⁷⁹ Confederation of Netherlands *Industry and Employers Bureau for Environment and Physical Planning* 1995.

regulators”.²⁸⁰ Likewise, Gunningham and Sinclair²⁸¹ argue that beyond the traditional command and control administrative role of the state, smart regulation ensures that enforcement is possible not just by the state but also by second and third parties who may act as surrogate regulators.

A hybrid approach to environmental governance undertaken from an IEM perspective should assume that all of us²⁸² ought to benefit from adherence to environmental laws while the cost of doing so should be borne by businesses in accordance with the polluter pays principle.²⁸³ From this premise, and to avoid possible sanctions, business and civil society could arrange a participative approach with the state in a hybrid model of environmental governance. In a governance context, the focus of the state is not necessarily command and control regulation but could include collaboration, participation and cooperation between stakeholders with the formation of public–private partnerships as illustrated in Figure 2.4.1 below. This speaks to the holistic nature of hybrid environmental governance from a self-governance outlook as illustrated in Figure 2.4.1.

²⁸⁰ Vogel 2008 *Annual Review of Political Science* 269.

²⁸¹ Gunningham and Sinclair “Smart regulation” 135.

²⁸² This refers to current and future generations contemplated in section 24(b) of the *Constitution*.

²⁸³ OECD 2005 <http://www.oecd.org/env/outreach/35139072.pdf>. Also, see section 2 of the NEMA.

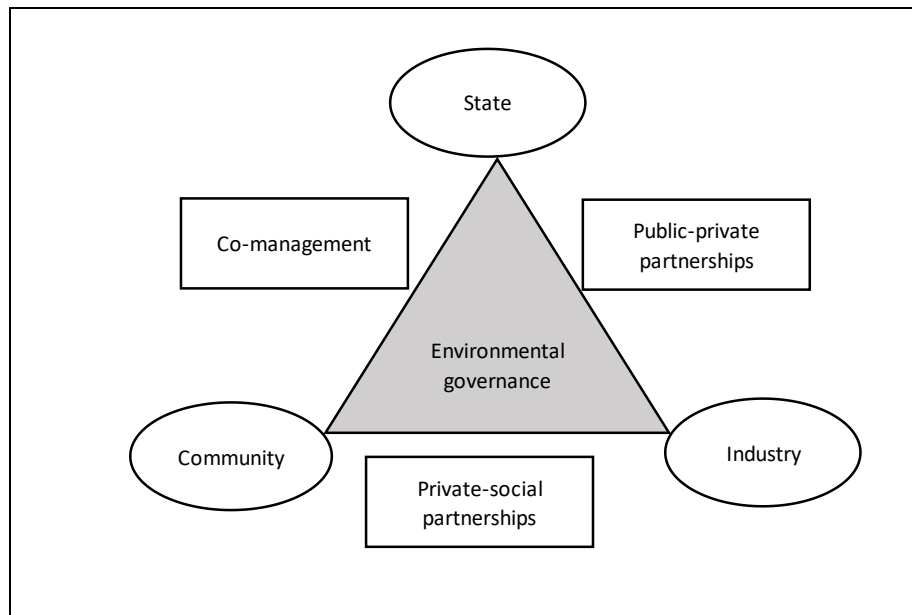


Figure 2.4.1: Regulatory strategies of environmental governance²⁸⁴

The triangle represents the government's changing role to execute environmental governance in society in pursuance of collective interests under severe external and internal constraints between the state, industry and the community.²⁸⁵ The state's objective for environmental protection, on the one hand, and profitability for the industry and socio-economic interests of the community on the other, may be best realised through hybrid arrangements on the basis of self-regulation which includes public-private partnerships as indicated in Figure 2.4.1 above. These partnerships should provide a platform for robust, open engagement between parties which could result in improved environmental compliance and monitoring strategies undertaken by the industry in regard to their collective interest as referred to above. Hybrid environmental governance could present itself in different forms as discussed next.

²⁸⁴ Lemos and Agrawal 2006 *Annu Rev Environ Resour* 310.

²⁸⁵ Lemos and Agrawal 2006 *Annu Rev Environ Resour* 310.

2.4.1 Forms of hybrid environmental governance

The idea of hybrid environmental governance is interchangeably referred to in this study as smart regulation,²⁸⁶ co-regulation,²⁸⁷ mandatory partial self-regulation,²⁸⁸ regulated self-regulation,²⁸⁹ mandated self-regulation,²⁹⁰ and co-management.²⁹¹ The overall purpose of self-regulation through the company's internal management strategies in environmental governance is to provide environmental legal compliance and assurance to applicable legal and other requirements within the organisation as per clause 6.1.3 of ISO 14001:2015.²⁹² Hybrid environmental governance is likely to play an important role either as an alternative or a complement to direct government regulation.²⁹³

Regulatory innovation with the use of hybrid environmental governance instruments opens the door for new opportunities and interactive learning amongst actors. A collective approach to environmental governance could increase an organisation's capability to improve its environmental performance as defined in terms of ISO 14001:2015,²⁹⁴ not by imposing demanding command and control imperatives, but by building compliance capabilities within the organisation.²⁹⁵ Innovation results in improved efficiency through fit-for-purpose technology²⁹⁶ while the organisation may

²⁸⁶ Gunningham and Sinclair "Smart regulation" 135; Du Plessis and Nel "Driving compliance" 259; Gunningham and Grabosky *Smart Regulation* 50.

²⁸⁷ Bartle and Vass "Self-regulation and the regulatory State a survey of policy and practice" 2005 *CRI Research Report* 19; Gunningham and Rees 1997 *Law and Policy* 363-414; Balleisen and Eisner 2009 "The promise and pitfalls of co-regulation: how governments can draw on private governance for public purpose"; Holley "Environmental regulation and governance" 742.

²⁸⁸ Rees *Reforming the workplace* 9. See Ansell and Gash 2008 *Journal of Public Administration Research and Theory* 543-571; De Clercq 2002 *Negotiating environmental agreements in Europe* 9 and Mol, Volkmar and Liefferink *The Voluntary Approach to Environmental Policy: Joint Environmental Policy-Making in Europe*.

²⁸⁹ Aalders "Self-regulation and compliance with Environmental Law from a global perspective" 21-36; Bartle and Vass 2005 *CRI Research Report* 19.

²⁹⁰ Darnall and Carmin 2005 *Policy Sciences* 71-90. See also Chamberlain 2017 *Law Environment and Development Journal* 3-12; Gunningham and Grabosky *Smart regulation* 50.

²⁹¹ See Magerman 1999 *Environmental Management* 151-166 and Nel and Du Plessis 2004 *SA Public Law* 183.

²⁹² In terms of clause 6.1.3 of ISO 14001:2015 the compliance obligations of an organisations include legal requirements (EAs, exemptions, directives, permits and licences to operate), that such an organisation has to comply with and other requirements that the entity has to or chooses to comply with. Also, see Kotze "Environmental governance" 103-128.

²⁹³ Gunningham and Grabosky *Smart Regulation* 50.

²⁹⁴ Refer to paragraph 2.3.3 above for a definition of environmental performance.

²⁹⁵ Camison-Zornova and Boronat-Navarro 2010 *Environmental and Planning C: Government and Policy* 740.

²⁹⁶ Nel and Wessels 2010 *PER/PELJ* 53.

be rewarded with greater incentives and there would be less responsibility on the part of the government.²⁹⁷ Nel and Wessels²⁹⁸ assert that improved regulatory flexibility enhances innovation within an organisation.

2.4.2 Instruments for hybrid environmental governance

Scholars are of the view that the rise in the adoption of environmental self-regulatory instruments in the industry can increase industry's participation in state regulatory actions.²⁹⁹ It is my view that instruments for hybrid environmental governance could be those environmental management plans required by an organisation to indicate possible environmental impacts and the required strategies that will be applied to mitigate any consequences of these impacts. In *Fuel Retailers Association of Southern Africa v Director-General: Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province & Others*³⁰⁰ the court held that:

Before authorisation can be granted, a report concerning the impact of the proposed development on the environment must be furnished. The relevant authority has the discretion to grant or refuse such authorisation. In granting it, the relevant authority may impose such conditions as may be necessary to ensure the protection of the environment.

Examples of these environmental management reports as held by the court could be, amongst others, environmental impact assessments reporting (EIAs), strategic environmental impact assessments (SEIAs), heritage impact assessments (HIAs), life cycle assessments (LCAs), environmental health impact assessments (EHIAAs) and social impact assessments (SIAs).³⁰¹ The granting of the required authorisation to an applicant may require that the applicant complies with various environmental management programmes (EMPrs)³⁰² to indicate how environmental impacts will be

²⁹⁷ Kidd *The protection of the environment through the use of criminal sanctions* 279-280.

²⁹⁸ Nel and Wessels 2010 *PER/PELJ* 53.

²⁹⁹ Demirel, Iatridis and Kesidou 2018 *Journal of Environmental Management* 80. Also, see Hysing 2009 *Govern* 647-672; Balleisen and Eisner "The promise and pitfalls of co-regulation: How governments can draw on private governance for a public purpose" 127-149 and Albareda 2008 *Corp Govern* 430-439.

³⁰⁰ 2007 ZACC 13; 2007 (10) BCLR 1059 (CC); 2007 (6) SA 4 (CC) (7 June 2007) at para. [4].

³⁰¹ Refer to paragraph 3.4 in Chapter 3 for a discussion.

³⁰² Refer to regulations 19 and 23 of the *EIA Regulations*, 2014 as amended.

managed, such as through a WMP,³⁰³ an air quality management plan (AQAMP),³⁰⁴ a biodiversity management plan (BDMP),³⁰⁵ a mine and works plan (MWP),³⁰⁶ an EMP,³⁰⁷ and an EMPr.³⁰⁸

Some scholars have indicated that within the continuum of state power and self-regulation a hybrid arrangement³⁰⁹ of environmental governance to implement sustainability and reduction initiatives³¹⁰ could be obtained by the association between government, civil society groups and the private sector.³¹¹ The above-mentioned plans could provide the vehicle for such a collaborative association. Besides, in a hybrid environmental governance system, these environmental management plans could be incorporated into the management systems of an organisation, as discussed above, through consultation, participation, innovation, and responsive regulation and by providing a broader more inclusive conception of the regulatory process.³¹² This concerted approach to environmental governance could improve the efficiency and effectiveness of more conventional forms of direct government regulation where industry could play a constructive and consultative role.

According to Jordan, Wurzel and Zito, the introduction of “new” environmental management and governance instruments,³¹³ such as other command and control measures is “[a]n attempt by states to share their steering capacity with other actors”.³¹⁴ Compliance with these environmental management plans and all existing

³⁰³ A WMP is a requirement in terms section 11 of the NEM:WA. Also see, for example, regulation 20 of the *Asbestos regulations* in *Occupational Health and Safety Act* 85 of 1993 for requirements in regard to the disposal of asbestos waste.

³⁰⁴ An AQAMP is required in terms of section 15-17 of NEM:AQA.

³⁰⁵ Required in terms of sections 40-46 of the NEM:BA.

³⁰⁶ See section 30 of the MPRDA.

³⁰⁷ Du Plessis and Nel “Driving compliance” 267. The authors contend that the objective of an EMP is to allow the regulated community to make arrangements for achieving legal compliance and to communicate such arrangements to the regulator.

³⁰⁸ The EMPr is prepared as part of the EMP to ensure that the environmental impacts related to a project that was identified during the environmental impact assessment (EIA) or basic assessment (BA) are appropriately managed and monitored. Also, refer to paragraph 3.4 in Chapter 3 for a discussion.

³⁰⁹ See Mol and Spaargaren “Towards a sociology of environmental flows” 39-84 and Fisher and Svendsen “Hybrid Arrangements within the Environmental State” 179-189.

³¹⁰ See Betsill and Bulkeley 2006 *Glob Gov* 141-159; Bulkeley and Schroeder 2012 *Eur J Int Relat* 743-766.

³¹¹ Galli and Fisher 2016 *Sustainability* 2.

³¹² Gunningham and Grabosky *Smart regulation* 12.

³¹³ Refer to Table 2.4.1 below for a list of environmental governance instruments.

³¹⁴ Jordan, Wurzel and Zito “New’ instruments of environmental governance” 1, 8.

EAs should be appraised through legal audits as discussed in the next section. Table 2.4.1 below provides a summary of environmental governance tools discussed in this study in terms of where it would fit in the regulatory continuum.

Table 2.4.1: Environmental governance instruments

Environmental governance instruments		
Command and control ³¹⁵	Pure self-regulation ³¹⁶	Hybrid environmental governance ³¹⁷
Atmospheric emission licence Environmental authorisation Integrated water use licence Legal compliance audit Mining right Record of decision Permit issued under the ECA Exemptions Directives Registration certificates Licences Certificates etc.	Responsible Care® ISO 9001:2015 standard ISO 14001:2015 standard ISO 45001:2018 standard OHSAS 18001:2007 standard etc.	Integrated/environmental management programme Community-based natural resources management plan Veld management strategy Community forest arrangements Contingency plans Emergency management plan Pollution prevention plan Air quality management plan Waste management plan Biodiversity management plan Integrated environmental management plan Legal compliance audits etc.

2.5 Conclusion

State regulation and hybrid environmental governance stated in the first broad objective³¹⁸ presuppose a difference in approach to achieve the objectives of environmental compliance. Government regulation takes on a typical command and control regime, while governance seeks to achieve environmental protection involving multiple stakeholders as surrogate regulators. This is the underlying principle of environmental governance. A holistic approach to environmental compliance is proposed in an effort to strike a balance in the conflicting interests of different

³¹⁵ Refer to paragraph 2.2 as well as Chapters 3 and 4 for a discussion.

³¹⁶ Refer to paragraph 2.3 as well as Chapters 3 and 4 for a discussion.

³¹⁷ Refer to paragraph 2.4 as well as Chapters 3 and 4 for a discussion.

³¹⁸ See paragraph 1.2 in Chapter 1.

stakeholders in a mutually beneficial manner through collaboration and engagement with stakeholders.

Legal compliance as an outcome of environmental governance in an organisation could be obtained through self-regulation, which according to the literature is not a precise concept. The aim of the study was to explore the role of self-regulation as an environmental governance tool to ensure compliance in the petrochemical industry. The theoretical framework for self-regulation as illustrated by Misiūnė seems to suggest that an organisation has to adapt to environmental influences emanating from its internal business environment.³¹⁹ Pressure from the micro- and macro-environment also influences an organisation's adoption of self-regulatory governance practices to realise legal compliance. Furthermore, a conceptual framework for self-regulation highlighted by Ramanathan *et al*/ suggests that the private organisational benefits of sustainability in respect of objective compliance are affirmed by the flexibility of self-regulation. Drivers and limitations for self-regulation prompt the petrochemical industry to pursue the type of regulatory instruments that expand its environmental governance strategy in favour of a wider hybrid environmental governance methodology.

ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007, ISO 45001:2018 and Responsible Care® provide a basis for self-regulatory governance in the petrochemical sector. These instruments offer a starting point for smart regulation by integrating these tools with various command and control instruments within the sector in a hybrid arrangement towards environmental governance. Despite the notion that self-regulatory practices, like internal EMS, QMS, OHSMS, other business management standards and strategies may complement state-led command and control and depending on how these management systems were developed and implemented may not be sufficient to address environmental legal compliance effectively in a complex petrochemical entity. Forms of hybrid environmental governance processes and instruments used in the petrochemical industry to ensure environmental legal compliance with fit-for-purpose instruments could offer a workable solution. The

³¹⁹ The adaptation of an organisation to external influences thus understanding its organisational context is also required by ISO 14001:2015, ISO 9001:2015 and ISO 45001:2018.

limitations of self-regulation allow for exploring the possibilities of hybrid environmental governance in a complex organisation. Also, an evolving environmental regulatory regime is suggestive of a state that is beginning to move away from strict command and control administration to allow surrogate regulators to undertake sustainable IEM collectively in a hybrid arrangement towards environmental governance.

The various EMPrs associated with its authorisations compiled in a complex petrochemical company do not only require stakeholder consultations, but the incorporation of these plans in the company's management systems. The incorporation of these plans are guided by adopted self-regulatory instruments by organisations contemplated by clauses 4.2, 6.1.3 and 7.4 of ISO 14001:2015, ISO 9001:2015 and ISO 45001:2018 respectively could drive purposeful environmental compliance.

Within the continuum of command and control and self-regulation, the government, NGOs, industry and civil society can become active centres of shared responsibility where participants that are formally independent of each other can either function independently or constitute an interdependent system of relations reminiscent of hybrid environmental governance.³²⁰ The next chapter focuses on environmental legal compliance audits.

³²⁰ Ostrom 2010 *American Economic Review* 643.

Chapter 3

Environmental legal compliance audits

3.1 Introduction

The focus of this chapter is the use of environmental legal compliance audits stated in objective two³²¹ by organisations as a verification tool to measure its level of compliance to legal and other requirements applicable to the entity. The purpose of a legal compliance audit is to check conformity of the fulfilment of conditions attached to authorisations, permits and licences against which a petrochemical entity conducts its activities.

This chapter will first indicate the origin of environmental auditing,³²² types of environmental audits,³²³ followed by the legal requirements for auditing³²⁴ as well as those audits voluntarily undertaken in the petrochemical industry.³²⁵

3.2 Origin of environmental auditing

The literature indicates that the term “environmental auditing” was coined in the USA in the mid-1970s.³²⁶ The concept defines the reporting of environmental information within a company in terms of what is required by environmental laws and regulations which emerged in response to public expectations for environmental protection.³²⁷ Furthermore, environmental audits have been defined by the International Chamber of Commerce as environmental management instruments that consist of impartial, methodical, recorded and regular assessments by an organisation of how satisfactorily its managements and apparatuses are functioning, with the objective of assisting to protect the environment by enabling management control of environmental

³²¹ See paragraph 1.2 of Chapter 1.

³²² Paragraph 3.2.

³²³ Paragraph 3.3.

³²⁴ Paragraph 3.4.

³²⁵ Paragraph 3.5.

³²⁶ Khan 2017 *Managerial Auditing Journal* 810.

³²⁷ Porter “America’s green strategy” 33.

applications, and evaluating compliance with the organisation's strategies that would lead to fulfilling of its regulatory obligations.³²⁸

3.3 Types of environmental audits

This study focused on exploring the how self-regulation as a governance tool could contribute to accomplish environmental legal compliance in the petrochemical industry from a governance perspective. One tool that can serve as an example to uphold legal compliance is a legal compliance audit used in the industry to ensure governance assurance. The DEAT³²⁹ distinguishes between the following types of environmental audits:

- (a) Environmental management audit: to check and evaluate the effectiveness of EMS;
- (b) Environmental compliance audit: to test compliance with environmental policies, objectives, laws, by-laws, ordinances, regulations and standards;
- (c) Environmental assessment audit: to check that an environmental impact assessment complies with the minimum legal requirements and to ensure that due legal process has been followed;
- (d) Waste audits: to look at the waste management component of an operation or site;
- (e) Environmental due diligence audits: to examine the actual and potential environmental liabilities of a site or operation;
- (f) A supplier audit: carried out by a client to test the environmental compliance of a contractor or supplier.

From the assertions above the features of an environmental audit can be described as:³³⁰

- (a) Confirmation: compliance with obligations is assessed, for example compliance with environmental legislation;

³²⁸ See Sarkar *et al* *An Integrated Approach to Environmental Management* 487.

³²⁹ DEAT *Environmental Auditing, Integrated Environmental Management, Information Series* 14 4-5.

³³⁰ DEAT *Environmental Auditing, Integrated Environmental Management, Information Series* 14 4-5. Also see Van Rooyen *The legal framework for environmental auditing in the public sector in South Africa* 57.

- (b) Impartiality: the objectivity of environmental auditors is checked, for example independence from individuals that have an interest in the audit findings recorded in the audit reports of an entity;
- (c) Instrumental use: environmental auditing is a checking mechanism (management instrument) employed to evaluate and manage environmental matters;
- (d) Methodological soundness:³³¹ environmental audits are conducted in consistence with established procedures;
- (e) Reporting: audit reports are formulated and audit results are recorded; and
- (f) Regularity: environmental audits are performed in accordance with a fixed audit schedule and at regular intervals.

Audits could be required for the following reasons:

- (a) To assess the level of compliance in terms of the organisation's self-regulation strategies, for example, to obtain ISO certification and be certified in terms of Responsible Care®;
- (b) From a command and control perspective, for example, as required in the *Environmental Impact Assessment Regulations*,³³² the *Minerals and Petroleum Resources Development Act 28 of 2002 (MPRDA)*³³³ and the NWA;³³⁴ and
- (c) To demonstrate compliance with a requirement in a condition contained in a particular authorisation, permit or licence.³³⁵

With regard to environmental audits, this study distinguishes between two types of audits in the context of this study, namely audits required in terms of legislation³³⁶ and where organisations apply internal or external audits as a checking mechanism for legal compliance.

³³¹ Refer to ISO 19011:2018.

³³² GN R 982 in GG of 38282 of 4 December 2014 as amended (Hereafter the *EIA Regulations*, 2014 as amended) See regulation 34 of the *EIA Regulations*, 2014 as amended as discussed in paragraph 3.5 in Chapter 3.

³³³ See section 10 of the MPRDA as discussed in paragraph 3.5 in Chapter 3.

³³⁴ See paragraph 3.5 in Chapter 3.

³³⁵ Refer to paragraph 3.5 in Chapter 3 and paragraph 4.5 in Chapter 4 for a discussion.

³³⁶ See chapter paragraph 3.5 in 3 for a discussion.

3.4 Audits required in terms of legislation

A petrochemical company undertakes certain listed activities that require a permit, licence or EA³³⁷ in terms of the NEMA, NEM:AQA, the *National Water Act* 36 of 1999 (NWA), the *National Environmental Management: Waste Management Act* 59 of 2008 (NEM:WA) and other related legislation.³³⁸ In terms of the provisions of section 24N(7)(d) of the NEMA the holder and any person issued with an EA must monitor and audit compliance with the requirements of the EMP. Furthermore, section 24N(2)(e) provides that the EMP of a holder of an EA must contain information in respect of the mechanisms proposed by the holder for monitoring compliance with the EMP and for reporting on the compliance status in relation thereto. In addition, regulations 26³³⁹ and 34³⁴⁰ of the *EIA Regulations*, 2014 as amended directly requires the petrochemical industry to assess its level of compliance by conducting environmental compliance audits. Furthermore, in terms of section 44(1)(aF) of the NEMA, the Minister may make regulations in regard to auditing and reporting of environmental liability.³⁴¹

The status and or level of compliance with an organisation's EMP, WMP, AQAMP as a result of its EA, Waste Management Licence (WML), and AEL could be determined by an audit.³⁴² A petrochemical company must also abide by the conditions attached to its various authorisations over the life cycle of those listed activities. Compliance with the set conditions through an audit is a requirement with regard to the relevant EMPs and EAs of that organisation.³⁴³ The state can also request an audit in terms of the permit and licence conditions.³⁴⁴

³³⁷ An EA is also referred to as a RoD issued in terms of the ECA.

³³⁸ Refer to paragraph 3.5 in Chapter 3 and paragraph 4.5 in Chapter 4 for a discussion.

³³⁹ Regulation 26(e) of the *EIA Regulations*, 2014 as amended provides for environmental compliance auditing while regulation 26(f) provides for the frequency of such audits as well as the submission of the audit report whereas regulation 26(h) requires the public availability of the audit report.

³⁴⁰ Refer to paragraph 3.5 in Chapter 3 and paragraph 4.5 in Chapter 4 for a discussion.

³⁴¹ Regulation 26(h) of the *EIA Regulations*, 2014 as amended provides for the auditing and reporting of environmental liability and requires the audit report to be publicly available.

³⁴² Refer to paragraph 3.5 in Chapter 3 and paragraph 4.5 in Chapter 4 for a discussion.

³⁴³ This is also a requirement in terms of regulation 34 of the *EIA Regulations*, 2014 as amended. Refer to Chapter 3 for a discussion.

³⁴⁴ Refer to paragraph 3.5 in Chapter 3 and paragraph 4.5 in Chapter 4 for a discussion.

The management of all protected areas in South Africa as listed in the national register in terms of the norms and standards³⁴⁵ in the *National Environmental Management: Protected Areas Act 57 of 2003* (NEM:PAA), amongst others, mandates the Minister “to appoint external auditors to monitor a management authority’s compliance with the overall objectives of the management plan”.³⁴⁶ Operational activities of petrochemical companies could influence the biodiversity in a protected area which could be highlighted by the management plan of such an area. While section 41 of the NEM:PAA prescribes the content of a biodiversity management plan, it could be argued that in a hybrid governance partnership between a petrochemical company, government and the local community the required resources in support of environmental management interventions could be agreed upon which could be an audit focus of these appointed external auditors. Likewise, sections 2 to 5 of Schedule 2 in the *National Environmental Management: Integrated Coastal Management Act 24 of 2008* (NEM:ICMA) provide for waste prevention audits. These provisions provide opportunities to petrochemical companies to introduce the required compliance audit practices where raw products are exported from our ports into the international markets.

Waste generation is a direct outcome of the operations of any petrochemical company, and the NEM:WA is positioned to control waste management in a such manner as to protect the environment and human health while providing for the prevention of environmental degradation and pollution by ensuring the principles of sustainable development are adhered to. Compliance with the conditions of the waste management licence and the EMPr is prescribed by the provisions of the *EIA Regulations, 2014* as amended.³⁴⁷

3.5 Voluntary audits by organisations

Apart from Responsible Care®, ISO 9001:2015, ISO 14001:2015 and OHSAS 18001:2007 and ISO 45001:2018, legal audits are commonly used to support self-regulation as a compliance verifying tool to ensure environmental governance reaches

³⁴⁵ *Norms and standards for the management of protected areas in South Africa* published under GN R382 in GG 39878 of 31 March 2016.

³⁴⁶ Section 43(4) of the NEM:PAA.

³⁴⁷ Refer to paragraph 3.5 in Chapter 3 for a discussion.

the set compliance objectives while the effectiveness of the above-mentioned management standards is also determined. Prajogo *et al*³⁴⁸ contend that the implementation of ISO 14001 in an organisation involves a complex set of steps, namely:

- (a) an evaluation of environmental aspects and impacts of an organisation;
- (b) the establishment of the organisation's environmental management objectives and policy;
- (c) training of employees, implementation and operation of the management standard;
- (d) the determination of the organisational risks and opportunities as it relates to internal and external issues;
- (e) the monitoring of compliance and corrective actions with regard to non-compliances;
- (f) document management within the organisation and;
- (g) importantly, external environmental audits by a third-party certification body in terms of its EMS.³⁴⁹

3rd party certification bodies only certify the EMS of an organisation, while in practice an independent 3rd party legal auditor will assess the entity's level of compliance to its legal and other requirements.³⁵⁰ In preparation of a 3rd party certification or compliance audit an organisation would normally undertake internal 1st and 2nd party audits to measure its level of compliance and to address possible shortcomings in its managements systems as well compliance to legal and other requirements.³⁵¹

A legal compliance audit supported by an EMS is an integral part of self-regulatory governance to assist the organisation in obtaining information about its compliance status, and to identify potential risks or non-compliance. This information will enable the implementation of appropriate environmental risk mitigation strategies and

³⁴⁸ Prajogo *et al* 2016 *International Journal of Auditing* 202. Also see Delmas 2002 *Policy Sciences* 91-119 and Gomez and Rodriguez 2011 *Journal of Cleaner Production* 9-10, 1091-1095.

³⁴⁹ See Delmas 2002 *Policy Sciences* 91-119 and Gomez and Rodriguez 2011 *Journal of Cleaner Production* 9-10, 1091-1095.

³⁵⁰ Own experience in the petrochemical industry.

³⁵¹ Own experience in the petrochemical industry.

environmental due diligence towards compliance within the organisation. The risk profile and regulatory context of the entity informs the legal governance and assurance framework and could serve as a basis for an organisation's risk management strategy.

According to Prajogo *et al*³⁵² environmental audits implemented in organisations as part of their ISO 14001 certification have a critical role to play in their overall environmental management efficiency. An organisation has to ensure that audits are conducted by accredited certification bodies to determine whether the entity meets the requirements of the standard, and, if so, it can publicly claims conformance with ISO 14001.³⁵³ While Bush³⁵⁴ asserts that even though ISO 14001 certification would indicate whether a company has indeed passed or failed its certification, clause 10 of ISO 14001:2015 states that the standard also requires organisations to improve their environmental management efforts continually.³⁵⁵

3.6 Conclusion

To this end, an environmental legal audit as identified in the second broad objective of the study³⁵⁶ is an assurance tool and does not fall within the category of either a self-regulatory or command and control environmental governance instrument as discussed in Chapter 2 above. Legal compliance audits could be a legal requirements in either legislative provisions thereof, or contained in conditions in authorisations. Similarly, organisations could opt to voluntarily conduct its own internal 1st of 2nd party compliance audits in terms of its adopted management standards.³⁵⁷

An audit is an instrument to determine conformance or compliance with either an organisation's self-regulatory management standards implemented for certification or to permit and licence conditions and can be regarded as a hybrid environmental

³⁵² Prajogo *et al* 2016 *International Journal of Auditing* 202. Also see Delmas 2002 *Policy Sciences* 91-119 and Gomez and Rodriguez 2011 *Journal of Cleaner Production* 9-10, 1091-1095

³⁵³ Prajogo *et al* 2016 *International Journal of Auditing* 202.

³⁵⁴ Busch *Standards: Recipes for reality*.

³⁵⁵ See Barthelemy and Zairi 1994 *The TQM Magazine* 44-47.

³⁵⁶ See paragraph 1.2 in Chapter 1.

³⁵⁷ Refer to ISO 14001:2015 and 45001:2018.

governance instrument.³⁵⁸ The added benefit of mandatory and voluntary compliance audits undertaken by the organisation supports its effort towards proactive legal compliance from a governance perspective as a commitment from senior management is required to extract the added compliance assurance from these audits for the organisation.

The next chapter focuses on regulatory progress made to allow self-regulation within the petrochemical industry as a hybrid approach to environmental governance.

³⁵⁸ See Chapter 2.

Chapter 4

Legal framework for self-regulation and hybrid environmental governance

4.1 Introduction

This chapter provides an overview of the legal framework for self-regulation in South Africa as indicated in the third objective of the study.³⁵⁹ This framework is discussed in the context of section 24 of the *Constitution*. Self-regulation from the perspective of environmental governance seems to suggest a management strategy that could be adopted by an organisation for the implementation of the appropriate voluntary regulatory tools to regulate its operations in a manner that will provide assurance in the observation of compliance with legal and other requirements to address the risk of non-compliance. In this chapter, the legal framework for self-regulation and hybrid environmental governance is discussed from the premise of the *Constitution*³⁶⁰ followed by its legal context.³⁶¹ The chapter concludes with hybrid environmental governance³⁶² and legal compliance audits.³⁶³

4.2 Command and control regulation and environmental governance in the constitutional context

The *Constitution* is the supreme law in South Africa³⁶⁴ and is central to the issues of environmental governance.³⁶⁵ Any law or conduct that is inconsistent with the *Constitution* is invalid.³⁶⁶ In terms of section 24 of the *Constitution*:

³⁵⁹ See paragraph 1.2 of Chapter 1.

³⁶⁰ Paragraph 4.2.

³⁶¹ Paragraph 4.3.

³⁶² Paragraph 4.4.

³⁶³ Paragraph 4.5.

³⁶⁴ In *BP Southern Africa (Pty) Limited v MEC for Agriculture, Conservation, Environment & Land Affairs* (03/16337) [2004] ZAGPHC 18 (31 March 2004) the court confirmed the supremacy of the *Constitution* and states that it reigns supreme and the Department of Agriculture, Conservation, Environment & Land Affairs, as the competent organ of state, is obliged to respect, promote, protect and fulfil the rights in the Bill of Rights. A failure on the side of the Department to do so would render its conduct invalid.

³⁶⁵ Du Plessis "Understanding the Legal Context" 12.

³⁶⁶ Van der Linde and Feris 2010 *Compendium of South African environmental legislation* 7; Du Plessis 2004 *SAJELP* 146.

Everyone has the right -

- (a) to an environment that is not harmful to their health or well-being; and
- (b) to have the environment protected, for the benefit of present and future generations, through *reasonable legislative and other measures* that-
 - (i) prevent pollution and ecological degradation;
 - (ii) promote conservation; and
 - (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.³⁶⁷

Section 24 provides for the right to and protection of the environment.³⁶⁸ This provision has two parts. Firstly, it guarantees everyone the right to an environment that is not harmful to the health and well-being of the people of South Africa as contemplated in section 24(a). Secondly, the protection of the country's natural resources for present and future generations is provided for in section 24(b) in such a manner that economic and social development remains sustainable through "reasonable legislative and other measures".³⁶⁹

The question is whether the provision in section 24(b) allows for some innovation and a change in our approach to environmental governance as held in the *Director: Mineral Development, Gauteng Region and Another v Save the Vaal Environment and Others*.³⁷⁰ The courts are beginning to reason that the regulator should take an inventive approach and look beyond the law to enable environmental compliance.³⁷¹ In *Government of the Republic of South Africa and Others v Grootboom and Others*³⁷² it was held that the mere legislation to ensure compliance is not enough. Meadowcroft³⁷³ asserts that the growing interest in cooperative models of environmental governance will not replace the existing regulatory approach of

³⁶⁷ Italics my insert.

³⁶⁸ In terms of section 1 of the NEMA "environment" means "the surroundings within which humans exist and that are made up of-

- (i) the land, water and atmosphere of the earth;
- (ii) micro-organisms, plant and animal life;
- (iii) any part or combination of (i) and (ii) and the inter-relationships among and between them; and
- (iv) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being".

³⁶⁹ Du Plessis "Environmental Law and Local Government in South Africa" 5.

³⁷⁰ 1999 2 All SA 381 (A). Hereafter *Save the Vaal*. The court in held in para. [20] that our *Constitution* requires that environmental considerations be accorded appropriate recognition and respect in the administrative processes in our country.

³⁷¹ The court held at para. [20] that "together with the change in the ideological climate must also come to a change in our legal and administrative approach to environmental concerns".

³⁷² 2001 1 SA 46 (CC) at para. [69] B-D. Hereafter *Grootboom*.

³⁷³ Meadowcroft "Co-operative management regimes: A way forward?" 21-42.

command and control, as the constitutional mandate of the state to enforce the law and regulate behaviour is vested in section 24 of the *Constitution*. This author's contention, in my view, does not appreciate the growing interest in self-regulation as discussed in Chapter 2.³⁷⁴ Gunningham and Grabosky³⁷⁵ claim that "[s]elf-regulation ... in general has the capacity to serve as a replacement for conventional state-led command and control regulation and could in effect act as a form of process-based regulation which could provide a company with considerable autonomy". The court in *Save the Vaal* advises that there may be a need for a change in our approach to environmental management which is aligned with the development of environmental governance as highlighted in Chapter 2.³⁷⁶ The environmental policy change from *government* to *governance* provides opportunities for a similar change in the compliance climate.³⁷⁷

According to section 24 not only is the state obliged to ensure a protected environment, but the industry also has a responsibility to conduct its operations in such a manner as to give effect to an environment that is safe for the well-being of everyone. There is as much an obligation on the industry as there is on the state to provide an environment that is not harmful. The industry, therefore, must put governance measures in place to regulate its business activities in fulfilment of this responsibility.³⁷⁸ One of these measures could be self-regulation.³⁷⁹

³⁷⁴ Gunningham and Grabosky *Smart regulation* 51. According to the authors a growing number of sophisticated self-regulatory schemes in regard to environmental protection has been developed like the safety regulations of nuclear power plants by the Industry for Nuclear Power Producers in the US; the Brazilian Extractive Reserves system for the exclusive and sustainable use of certain land by communities and the Canadian Sustainable Forest Management Certification System.

³⁷⁵ Gunningham and Grabosky *Smart regulation* 174. Companies may then be exempted from all or part of the regulatory requirements that the State would otherwise impose. Furthermore, the ISO 14001:2015 standard states that top management in an organisation must take accountability for the effectiveness of the EMS. The implementation of self-regulatory compliance strategies can improve a company's self-efficiency with regards to its internal EMS, QMS and MSOHS.

³⁷⁶ 1999 2 All SA 381 (A) at para. [20].

³⁷⁷ Refer to paragraph 2.2 in Chapter 2.

³⁷⁸ Where the State may have the constitutional mandate and responsibility to promulgate reasonable legislative measures to ensure environmental protection the industry can be an actor in the environmental governance space in terms of providing other measures to give effect to section 24 in an enabled and supportive regulatory setting with state oversight to regulate industry behaviour.

³⁷⁹ Refer to paragraph 2.3 in Chapter 2.

Organisations also have a legal and moral duty to comply with environmental laws and regulations to give effect to section 24 of the *Constitution*. Compliance with regulatory requirements contemplated by environmental and related legislation³⁸⁰ allows the petrochemical industry to conduct its operations. Equally, the actions of industry should be conducted in a manner consistent with the people's right to a protected environment.

The inclusion of an environmental right in the *Constitution* and the emergence of section 24 as the primary strategy for environmental protection in South Africa made it possible for the Constitutional Court to pronounce on environmental matters relevant to environmental compliance and enforcement.³⁸¹ With a view to giving effect to the provision in section 24, the state has put in place several reasonable legislative and other measures to ensure an effective and efficient environmental regime for South Africa through the promulgation of a suite of environmental legislation.³⁸² The prominent environmental framework law to give effect to the *Constitution* is the NEMA, which contains a number of provisions that are directly relevant to environmental compliance and enforcement.³⁸³ The NEMA is supported by an extensive legislative

³⁸⁰ These legislative measures include amongst others *Genetically Modified Organisms Act* 15 of 1997; *Marine Living Resources Act* 18 of 1998; *Minerals and Petroleum Resources Development Act* 28 of 2002 (MPRDA); *NEMA*; NEM:AQA; NEM:BA; NEM:PAA; NEM:WA; NEM:ICMA; *National Forest Act* 84 of 1998; and the *National Water Act* 36 of 1998 (NWA).

³⁸¹ See, for example, *Minister of Public Works and Others v Kyalami Ridge Environmental Association and Others* 2001 (7) BCLR 652 (CC). The Kyalami residents relied on the provisions of the NEMA and ECA as well as their environmental rights under section 24 of the *Constitution* in their contention that the establishment of a transit emergency camp at Leeuwkop would contravene various statutes, and that the decision by the Minister of Public Works to establish the transit camp was accordingly unlawful and invalid; *Harmony Gold Mining Company Limited v Regional Director Free State Department of Water Affairs and Forestry and Another* 2006 SCA 65 (RSA). The court contends that the task of construing section 19 of the NWA in respect of the pumping of water from a mine shaft by Harmony Gold Mining Company Limited must commence with reference to section 24 of the *Constitution*; *Fuel Retailers Association of Southern Africa v Director-General: Environmental Management* 2007 (6) SA 4 (CC). The court held that before an EA could be issued by a competent authority in respect of a listed activity the applicant has to provide a report concerning the impact of the proposed development to the authority; and *HTF Developers (Pty) Ltd (Pty) Ltd v Minister of Environmental Affairs and Tourism and Others* 2006 (5) SA 512 (T). The applicant was directed to immediately to cease clearing a development site and to cease its construction activities on the site and to design and implement a plan for the land's rehabilitation. It was argued that the applicant's activities on the site were illegal, as it had failed to secure the necessary departmental authorisation prior to commencing those activities as required by the section 22(1) of the ECA.

³⁸² See Du Plessis "Understanding the legal context" 31 and Craigie, Snijman and Fourie "Dissecting environmental compliance and enforcement" 41-64.

³⁸³ Du Plessis "Environmental compliance and enforcement measures" 380. The author asserts that in environmental management and legal framework compliance is often defined as the "full

framework.³⁸⁴ Nevertheless, according to the literature as discussed in Chapter 2, the state is no longer the only authority in environmental decision-making.³⁸⁵ Similarly, the literature seems to suggest that “other measures” may include alternative regulatory instruments from surrogate regulators other than the state to reach environmental policy objectives, which may include hybrid environmental governance arrangements aimed at self-regulation within the petrochemical industry.³⁸⁶

Thus, the current South African legal and environmental governance landscape may be characterised as paradoxical with state-led command and control style initiatives on the one hand and a combination of alternative environmental management and governance tools on the other.³⁸⁷ On the contrary, these two regulatory regimes could work effectively together in a hybrid model of environmental governance within an enabling system of government regulations and could be compatible with other measures or governance mechanisms where the state has an oversight role.³⁸⁸

Section 24 provides the enabling system for the state to develop such a hybrid model of environmental compliance. Paterson and Kotzé³⁸⁹ are of the opinion that section 24 contains innovative mechanisms to achieve cooperative governance, proactive regulation of citizens’ conduct to prevent detrimental environmental impacts as well as supporting environmental compliance while sanctioning non-compliance. The responsibility of the state in terms of comprehensive environmental management is

implementation of environmental requirements,” while enforcement seeks results and refers to the set of actions taken by the State and/or others to achieve legal compliance ... and to correct or halt situations that endanger the environment.

³⁸⁴ This framework provides a regulatory regime for biodiversity in the *National Environmental Management: Biodiversity Act* 10 of 2004 (NEM:BA); protected areas in the *National Environmental Management: Protected Areas Act* 57 of 2003 (NEM:PAA); air quality in the *National Environmental Management: Air Quality Act* 39 of 2004 (NEM:AQA); waste management in the *National Environmental Management: Waste Management Act* 59 of 2008 (NEM:WA) and integrated coastal management in the *National Environmental Management: Integrated Coastal Management Act* 24 of 2008 (NEM:ICMA). These laws contain a myriad of provisions as well as a mixture of relevant governance tools for environmental compliance and enforcement to enact environmental protection.

³⁸⁵ See Armitage, De Loë and Plummer 2012 *Conservation Letters* 245; Ostrom 2010 *American Economic Review* 643; McGinnis *Polycentric Governance and Development*; Holley, Gunningham and Shearing *The New Environmental Governance* 4; and Holley “Environmental regulation and governance” 742.

³⁸⁶ See Du Plessis and Nel “Driving Compliance” 259-285. Refer to paragraph 2.4 in Chapter 2.

³⁸⁷ Du Plessis and Nel “Driving Compliance” 263.

³⁸⁸ Armitage, De Loë and Plummer 2012 *Conservation Letters* 247.

³⁸⁹ Paterson and Kotzé “Environmental Compliance and Enforcement in South Africa Legal Perspectives” 2.

achieved within the NEMA framework through numerous environmental regulatory measures in order to ensure compliance by imposing criminal sanctions against non-compliant organisations.³⁹⁰

Furthermore, the objectives of the NEMA³⁹¹ using the conventional regulatory approach are to mitigate the environmental impact on sustainable economic activity³⁹² through the provision of environmental enforcement tools such as performance standards,³⁹³ the environmental management inspectorate (EMI),³⁹⁴ and public participation.³⁹⁵ These measures could, amongst others, be referred to as reasonable legislative measures contemplated in section 24(b) within the regulatory continuum as discussed in Chapter 2.³⁹⁶

³⁹⁰ Examples of criminal sanctions in terms of the NEMA framework include: Section 24N(8) of the NEMA that contemplates that notwithstanding the *Companies Act* 71 of 2008, or the *Close Corporations Act* 69 of 1984 the directors of a company or members of a close corporation are jointly and severally liable for any negative impact on the environment, whether advertently or inadvertently caused by the company or close corporation which they represent, including damage, degradation or pollution. In terms of section 24N(8) of the NEMA a Chief Executive Officer of a company may aside from Act 71 of 2008 or Act 69 of 1984 be jointly and severally liable for any negative impact on the environment caused by the company and where such action advertently or inadvertently causes damage, degradation or pollution to the environment. In terms of section 151(2) of the NWA for a first conviction a fine not exceeding R100 000, or imprisonment for a period not exceeding five years, or both such fine and such imprisonment may be imposed. For a second or subsequent conviction a fine not exceeding R200 000, or imprisonment for a period not exceeding ten years, or both such fine and such imprisonment could be imposed. A first conviction in terms of sections 52(1)-(3) of the NEM:AQA will result in a fine not exceeding R5 million, or imprisonment not exceeding a period of five years, or both such fine and such imprisonment. A second or subsequent conviction will cause a fine not exceeding R10 million, or imprisonment not exceeding a period of ten years or both such fine and such imprisonment. The fine must be determined with consideration of:-

- (a) the impact, or potential impact, on health, well-being, safety and the environment;
- (b) the monetary or other benefits accrued to the convicted person as a result; and
- (c) the extent of the convicted person's contribution to the overall pollution load of the area.

In terms of the NEM:WA a *List of Waste Management Activities that have, or are likely to have a detrimental effect on the environment* ("the listing notice") was published in GN R718 in GG 32368 of 3 July 2009. These regulations comprise of a list of waste management activities, which require authorisation in terms of section 20 of the NEM:WA. Failure to obtain such authorisation is a criminal offence in terms of section 20, read with section 67(1)(a). Section 68(1) allows for a maximum penalty of R10 million or imprisonment of 10 years, or both, on conviction.

³⁹¹ The specific mandate of the EMI is to monitor and enforce compliance with South Africa's environmental management legislative regime and investigate potential offences and breaches of it. Provided for in the preamble of NEMA in terms section 31A to 31Q of the NEMA.

³⁹² King and Lenox 2000 Academy of Management Journal 698.

³⁹³ NEMA: *Environmental Impact Assessment Regulations*, GN R982 in GG 38282 of 4 December 2014 as amended.

³⁹⁴ Application and enforcement of the NEMA and any SEMA through EMIs is contemplated by sections 31A to 31Q of the NEMA.

³⁹⁵ See amongst others, sections 23(2)(d), 24G(1)(vii)(dd) and 25(3)(f) of the NEMA.

³⁹⁶ See paragraphs 2.3.1 and 2.4.2 of Chapter 2.

According to Kotzé and Paterson³⁹⁷ the meaning of "legislative measures" is self-evident. However, the authors contend that the notion of "other measures" may be construed to include prescribing policy and taking measures of an administrative, technical, financial and educational nature. He also notes that the socio-economic character of section 24 of the *Constitution* is embodied in these measures.³⁹⁸ asserts that a literal meaning should be attached to these phrases and that accordingly, reasonable legislative and other measures would therefore include policies, legislation and regulations that should be reasonable and subject to the provisions, principles and values of the *Constitution*. Kotzé,³⁹⁹ however, further proposed that "other measures" be afforded a wide meaning in favour of a more comprehensive option that may be taken into account when the most suitable measure is selected for sustainability.

Du Plessis and Nel⁴⁰⁰ argue that other measures may include alternative instruments, including "new" environmental management instruments, that will realise policy objectives. Du Plessis⁴⁰¹ indicates that other measures could also include mechanisms generally referred to as environmental advocacy tools. The wider meaning afforded to "other measures" may arguably include those measures and instruments used in the industry as hybrid environmental governance tools.⁴⁰² The courts have not yet pronounced on this matter.⁴⁰³

I argue that in circumstances where legislative measures will not bring about environmental compliance, other measures, such as self-regulatory instruments in a petrochemical company could, for example, be implemented to achieve the objectives

³⁹⁷ Kotzé and Paterson 2009 *The Role of the Judiciary in Environmental Governance: Comparative Perspectives* 561.

³⁹⁸ Kotzé *A legal framework for integrated environmental governance* 22.

³⁹⁹ Kotzé *A legal framework for integrated environmental governance* 22.

⁴⁰⁰ Du Plessis and Nel "Driving compliance" 259. Also, see Du Plessis 2004 *SAJELP* 135-151 and Kotzé and Du Plessis 2007 *Stellenbosch Law Review* 161-193.

⁴⁰¹ Du Plessis 2004 *SAJELP* 147. In *Hichange Investments (Pty) Ltd v Cape Produce Co (Pty) Ltd T/A Pelts Products & Others* 2004 (2) SA 393 (E) the applicant applied different advocacy tools to reduce the environmental and health impacts of its activities and to comply with the conditions of its registration certificate, that is: research and information gathering, lobbying by an active environmental group, letters petitioning government to take action, complaint to the Human Rights Commission, and legal action.

⁴⁰² See paragraph 2.4 in Chapter 2 as well as paragraph 5.4 in Chapter 5.

⁴⁰³ Du Plessis 2004 *SAJELP* 146.

of environmental protection contemplated in section 24. In *Grootboom*⁴⁰⁴ the court held that “[t]he State is required to take reasonable legislative *and* other measures. Legislative measures by themselves are not likely to constitute constitutional compliance”. The court further contends that the programmes instituted by the state “must be balanced and flexible”.⁴⁰⁵ Flexibility in a command and control regime is a challenge for the regulator especially in a context where some authors argue that it is not solely the duty of the state to find solutions for environmental problems and that ideally, various stakeholders should cooperate to make it happen.⁴⁰⁶

In *Hichange Investments (Pty) Ltd v Cape Produce Co (Pty) Ltd T/A Pelts Products & Others*,⁴⁰⁷ for example, the applicant applied different advocacy tools as other measures to reduce the environmental and health impacts of its activities and to comply with the conditions of its registration certificate. In achieving the objective of reduced environmental and health impacts, it could be argued that *Hichange Investments* applied a hybrid approach through self-regulation to ensure environmental legal compliance within its own organisational context using the appropriate environmental management tools.

Learning from the arguments noted above, one may indicate two schools of thought with regard to “reasonable and other measures”. On the one hand some scholars are of the view that “reasonable and other measures” are pure command and control legislation while others argue that these provisions are wider and could include instruments other than regulations towards a mixture of innovative “new” environmental governance tools. I am of the view that while the obligation for environmental protection provided in section 24 could be given effect by reasonable legislative measures invoked by the state, it could be argued that the industry itself could implement other measures to realise the objectives of section 24.⁴⁰⁸

⁴⁰⁴ 2001 1 SA 46 (CC) at para. [69] B-D.

⁴⁰⁵ 2001 1 SA 46 (CC) at para. [43].

⁴⁰⁶ Jordan, Wurzel and Zito “New’ instruments of environmental governance: patters and pathway of changes” 8 and Du Plessis and Nel “Driving compliance” 269. Also, see paragraph 2.2.1 in Chapter 2.

⁴⁰⁷ 2004 (2) SA 393 (E).

⁴⁰⁸ These other measures can include voluntary self-regulatory instruments developed and adopted by the industry as discussed in paragraph 2.3 in Chapter 2.

The two most frequently used command and control enforcement measures to facilitate environmental compliance to address non-compliant behaviour⁴⁰⁹ are administrative measures⁴¹⁰ and criminal measures.⁴¹¹ Non-compliance with these administrative measures could result in both civil and criminal liability. Enforcement of the provisions of the NEMA and SEMAs is located in the EMI.⁴¹² Conducting a listed activity without an EA is also prohibited in terms of section 24F of the NEMA.⁴¹³

In addition, the polluter pays principle in terms of the NEMA supports the duty of care principle the holder of an authority must uphold towards protecting the environment

⁴⁰⁹ In *S v Blue Platinum Ventures 16 (Pty) Ltd & Matome Samuel Maponya* (unreported) case number RN126/13 of 9 January 2014 the court successfully convicted Mr Matoma Samuel Maponya, director of Blue Platinum Ventures in his personal capacity for environmental crimes committed by his company in terms of the provisions of section 34(7) of the NEMA. Mr Maponya knowingly allowed the company to commence with operations where the listed activities were not yet approved by the relevant competent authorities thus causing damage to the environment. Also, in *S v Nkomati Anthracite (Pty) Ltd* (unreported) case number, SH 412/13 of 28 Augustus 2013 the mining company pleaded guilty for contravening the sections 24F, 24D and 34 of the NEMA as well as section 151(1)(a) of the NWA. Interestingly, these court and other judgements are a direct outcome of the conventional approach to environmental regulation and enforcement regime in South Africa. The responsibility of the State in terms of comprehensive environmental management is effected within the NEMA framework through numerous environmental regulatory measures in pursuance of compliance by imposing criminal sanctions against non-compliant organisations.

⁴¹⁰ Administrative measures seek to facilitate environmental compliance using, for example, abatement notices for example section 4(8) of the *National Forest Act* 84 of 1998; directives issued in terms of section 28 of the NEMA; compliance notices in terms of section 31I of the NEMA and the withdrawal of permits, licences and exemptions in terms of regulation 38 of GN R 982 in GG of 38282 of 4 December 2014 as amended. In terms of section 28(4) of the NEMA, a directive may be issued by the Director-General of the DEA or the Head of Department (HOD) of the provincial DEA. Section 19(3) read with section 72 of the NWA provides that directives may be issued by the catchment management agency (CMA) or by the Minister where such CMA is not yet established or functioning.⁴¹⁰ The Minister or the MEC or the local government authority are the competent authorities to issue a directive in terms of ECA contemplated in section 31A of the ECA.

⁴¹¹ See Paterson and Kotzé *Environmental Compliance and Enforcement in South Africa Legal Perspectives* 6-7. Criminal measures, on the one hand, seek to compel compliant behaviour and thus gain enforcement through the prescription of an array of criminal offences and sanctions while administrative measures focus on improving environmental performance.

⁴¹² The South African Police Service also has the authority to investigate any transgression in terms of the NEMA or any specific environmental management Act contemplated in section 24G(6)(a).

⁴¹³ In accordance with section 24G of the NEMA, if in the opinion of Minister or competent authority or local authority or government institution concerned where a person performs any activity without an authorisation and as a result of which the environment is or may be seriously damaged, endangered or detrimentally affected the Minister or competent authority may in writing direct the person to:

- (a) cease the activity or;
- (b) take steps to eliminate, reduce, prevent damage, danger or detrimental effect.

The Minister or competent authority may direct the person at own expense to rectify such damage or rehabilitate any damage caused as a result of the activity or failure. If the person fails to take steps the Minister or competent authority may authorise any person to fulfil the task and all expenses are to be recovered from the "polluter".

as contemplated in section 28 of the NEMA,⁴¹⁴ section 16 of the *National Environmental Management: Waste Act*, 59 of 2008,⁴¹⁵ section 19 of the NWA,⁴¹⁶ section 29 of NEM:AQA,⁴¹⁷ and section 45 of the *Mineral and Petroleum Resources Development Act*.⁴¹⁸ From a command and control perspective, these provisions empower a competent authority to direct transgressors to take a number of steps to remedy harm to the environment. Furthermore, the industry is cognisant that environmental protection is also regulated in the NEMA through private prosecution in terms of section 33.⁴¹⁹ The industry's quest for environmental protection and subsequent compliant behaviour could at best be addressed through cooperation and opportunities offered by self-regulation through hybrid governance rather than apprehension and the fear of prosecution occasioned by command and control.

4.3 Self-regulation and the law

4.3.1 Policy documents

Prior to the promulgation of the NEMA, environmental policy in South Africa referred to self-regulation in environmental management. The *Green Paper on Environmental Policy* of October 1996⁴²⁰ was aimed at developing a broad policy and strategic framework to enable sustainable environmental management in South Africa in a new constitutional regime. The *Green Paper* indicated that there were various areas that

⁴¹⁴ Section 28(1) of the NEMA: The duty of care from the perspective of the NEMA relates to the full-circle responsibility of waste management and refers to "life-cycle responsibility" or "cradle-to-grave" responsibility of waste generators within the petrochemical industry.

⁴¹⁵ Section 16 of the *National Environmental Management: Waste Act*, 59 of 2008 (Hereafter the NEM:WA) provides for the general duty in respect of waste management.

⁴¹⁶ The duty of care in terms of section 19 of NWA focus on the prevention and remedying effects of pollution.

⁴¹⁷ Section 29 of NEM:AQA provides the requirements for pollution prevention plans.

⁴¹⁸ 28 of 2002 hereafter the MPRDA.

⁴¹⁹ In *Uzani Environmental Advocacy CC v BP Southern Africa (Pty) Ltd* 2017 ZAGPPHC 749, for example, the matter was brought in terms of section 33 of the NEMA. Uzani claimed that BP had contravened section 22(1) read with sections 21(1) and 29(4) of the ECA read with Item 1(c) of Schedule 1 and Schedule 2 of the Regulations promulgated in terms of that Act under GN R1182 in GG 18261 of 5 September 1997. Uzani also alleged that BP was commissioning certain acts of common law fraud. The company constructed and/or upgraded filling/service stations being used as storage, handling or processing facilities for petroleum and/or petroleum products without reports concerning its impact in terms of Section 22(2) of ECA and without the written authorization of the relevant competent authority. BP was subsequently found guilty and convicted for contravening section 22(1) read with sections 21(1) and 29(4) of the ECA and items 1 (c) of Schedule 1 and Schedule 2 of GN R1182 of 5 September 1997.

⁴²⁰ <http://libguides.wits.ac.za/c.php?g=145459&p=952320>. The Green Paper was part of the *Consultative National Environmental Policy Process* (CONNEPP).

the government needed to address in its environmental policy. These areas are improved pollution and waste control, a focus on public participation by providing people with an opportunity in environmental decision-making, developing an improved system of environmental governance, and ensuring that environmental decision-making involved an integrated and macro-economic perspective. The governance regulatory mechanisms proposed in the *Green Paper* took note of two approaches, namely "strict liability" and "self-regulation".⁴²¹ The *Green Paper* stated that "[i]n order to avoid the dangers of extreme positions, it was best not to use these labels ... to devise a balanced and holistic package of mechanisms⁴²² to ensure that regulation takes place in a consistent and effective manner".⁴²³ This policy approach seemed to presuppose hybrid environmental governance and to distinguish between command and control regulation and self-regulation. It proposed a balance between the two governing regimes to "ensure that regulation takes place in a consistent and effective manner" applying a "holistic package of mechanisms".⁴²⁴ Sustainability, according to the *Green Paper*, could be achieved holistically as long as the balance between the two regimes satisfy the national environmental management principles contemplated in section 2 of the NEMA.⁴²⁵

⁴²¹ According to the *Green Paper on Environmental Policy* "[c]ertain trends suggest that environmental policy is moving away from centralised decision-making, costly proliferation of structures, detailed regulation and command and control approaches towards the setting of objectives, clear standards and the provision of information appropriate to an effective facilitated, participatory self-regulation system".

⁴²² This holistic package of environmental mechanisms could possibly be regarded as hybrid environmental governance tools discussed in paragraph 2.4 below.

⁴²³ *Green Paper on Environmental Policy*, July 1997.

⁴²⁴ Refer to paragraph 4.5 below.

⁴²⁵ Sustainable development from the perspective of integrated and sustainable management of the environment contemplated in the *White Paper* is central to the philosophy of IEM which is a key element of the NEMA. The internationally accepted definition of sustainable development as it appears in the *National framework for sustainable development* is that SD "suggests a 'systematic approach to sustainability' where the economic system, socio-political system and ecosystem are seen as embedded within each other, and then integrated via the governance system that holds all the other systems together within a legitimate regulatory framework". In terms of the NEMA "sustainable development" means the integration of social, economic and environmental factors into planning, implementation and decision-making so as to ensure that development serves present and future generations. This dissertation will not explore the concept of SD due to the scope of this study. Refer to paragraph 2.2.3 in Chapter 2 for a discussion on IEM. Also, see <https://Iemerst633.Wordpress.Com/2014/09/09/The-Iem-Principles/>.

The *Green Paper* was followed by a *White Paper on Environmental Management Policy for South Africa*.⁴²⁶ The then DEAT included some of the comments⁴²⁷ of the *Green Paper* and the views expressed at the second Consultative National Environmental Policy Process (CONNEPP II) in this policy document.⁴²⁸ The *White Paper* sought to inform the public about the environmental management objectives of the government and how the state intended to reach these objectives.⁴²⁹ The *White Paper* proposed that the people of South Africa be part of the definition of the environment and should be at the centre of concerns for its sustainability where “[a]ll people have sufficient food, clean air and water, decent homes and green spaces in their neighbourhoods enabling them to live in spiritual, cultural and physical harmony with their natural surroundings”.⁴³⁰ The ideals of the *White Paper* could only have been realised through a new model or paradigm of sustainable development that was based on integrated and coordinated environmental management. The *White Paper* introduced the concept of sustainable development in environmental management.⁴³¹

The *White Paper* focused on policy that emphasised the integrated and sustainable management of the environment, for current and future generations which are the essential basis of sustainable development in all areas of human activity.⁴³² While the

⁴²⁶ GN R749 in GG 18894 of 15 May 1998.

⁴²⁷ The researcher notes that not all the comments from the *Green Paper* were considered in the *White Paper*, for example, the notion of self-regulation was omitted.

⁴²⁸ The NEMA includes an overarching framework policy developed through a comprehensive participatory process known as the CONNEPP. See https://www.environment.gov.za/documents/strategies/eiams_environmentalimpact_assessmentmanagement.

⁴²⁹ GN R749 in GG 18894 of 15 May 1998.

⁴³⁰ See the vision of the *White Paper*.

⁴³¹ According to the *White Paper*, this new regulatory model would “promote the environmental health and well-being of the South African people by addressing:

- (a) people’s quality of life and their daily living and working environments;
- (b) equitable access to land and natural resources;
- (c) the integration of economic development, social justice and environmental sustainability;
- (d) more efficient use of energy resources;
- (e) the interaction between population dynamics and sustainable development;
- (f) the sustainable use of social, cultural and natural resources;
- (g) public participation in environmental governance; and
- (h) the custodianship of the environment”.

⁴³² This approach to environmental management is aligned with the provisions of section 24 of the *Constitution*. This vision could only have been accomplished if government policy represented a bold paradigm shift in its approach to environmental management with the “[i]ntroduction of an integrated and coordinated management regime that:

- (a) addressed the total environment and all human activities impacting on it, and

Green Paper referred to self-regulation in environmental governance, the *White Paper* emphasised integrated and sustainable environmental management.⁴³³

There is no indication why self-regulation was omitted in the *White Paper*. The principles in the *White Paper* suggested a move away from regulation to governance but not self-governance.⁴³⁴ The position of self-regulation in the NEMA is discussed next.

4.3.2 The positioning of self-regulation within the NEMA

The notion of self-regulation did not find its way into the initial NEMA. Section 24 of the *Constitution* in general and section 23(1) of the NEMA in particular seek for the promotion and application of *appropriate environmental management tools* in favour of IEM.⁴³⁵ While these provisions align with the focus of the *White Paper* it is not clear what the content of these appropriate EM tools would be and whether it could have provided for self-regulation. Moreover, the definition of IEM as discussed in Chapter 2⁴³⁶ emphasises the role of all sectors of society for the assessment and management of environmental impacts as a collective which aligns with the philosophy of what self-regulatory environmental governance seeks to accomplish.

In 2013 the NEMA was amended to include section 23A.⁴³⁷ Where section 24 of the *Constitution* provides for the realisation of environmental protection through

-
- (b) would have ensured that all aspects of environmental governance including norms, standards, legislation, administration and enforcement were dealt with uniformly across departments and in all spheres of government”.

⁴³³ The emphasis of integrated and sustainable management in the *White Paper* was to address “environmental concerns and environmental sustainability in:

- (a) decision-making processes;
- (b) the development of policies and programmes;
- (c) spatial development planning; and
- (d) the management of resources and activities”.

⁴³⁴ Refer to paragraph 2.3 in Chapter 2.

⁴³⁵ Section 23(2)(a)-(f) of the NEMA provides for the general objective on IEM with the guidance and support of the Director-General of Environmental Affairs. In terms of these objectives IEM seeks to integrate the environmental management principles; assess environmental impact on environment, socio-economic conditions and cultural heritage; ensure that the effects of activities on the environment receive adequate consideration before taking any actions; ensure adequate public participation in environmental decision-making; and the consideration of environmental qualities in management and decision-making which may significantly effect the environment; and identify and employ best practice with regard environmental management to satisfy the principles of environmental management.

⁴³⁶ Refer to paragraph 2.2.3 in Chapter 2.

⁴³⁷ See the *National Environmental Management Laws Second Amendment Act* 30 of 2013.

reasonable legislative and other measures,⁴³⁸ the initial NEMA omitted the inclusion of self-regulation. The latter only made provision for the required reasonable legislative measures with a focus on command and control regulation. Gunningham⁴³⁹ argues that “[f]or legislation to ‘work’ it must not only be well designed but also effectively implemented and enforced” through the application of the right resources as well as effective inspections. Examples of mandatory monitoring and inspections are:

- (a) the monitoring of the performance of water services institutions to determine compliance with the national norms and standards required in terms of section 27 of the *Water Services Act* 108 of 1997;
- (b) the monitoring of environmental impacts in terms of section 24(4)(f) of the NEMA;
- (c) the ongoing management and monitoring of environmental impacts required by section 24E(a) of the NEMA; and
- (d) the monitoring of biodiversity status and bioregional plans in terms of the provisions of section 38(1)(b) of the NEM:BA.

The initial NEMA was well designed to give effect to section 24 of the *Constitution* from a command and control outlook by providing for reasonable legislative measures in order to regulate behaviour in the industry. Although most of the command and control measures were instituted with sections 31B, 31BA and 31C of the NEMA with designated EMIs, it could, however, be submitted that the legislation did not seem to work for self-regulation.⁴⁴⁰ On the basis of this, it can be contended that the NEMA did not adequately provide opportunities for innovation, flexibility and collaborative

⁴³⁸ See paragraph 4.2 above.

⁴³⁹ Gunningham 2012 *Journal of Environmental Law* 170. Also see Mushal 2007 *Journal of Environmental Law* and Abbot 2005 *Journal of Environmental Law* 161-180.

⁴⁴⁰ The original NEMA was amended at different times since 2002 from its promulgation in 1998 to provide for compliance and enforcement specifically through the designation of EMIs. Initially, environmental transgressions were observed through whistleblowing which may have been insufficient for effective environmental protection. Later improvements to the NEMA introduced the EMIs. The notion of “environmental management inspector” was first defined by the *National Environmental Management Amendment Act* 46 of 2003 while the EMI’s enforcement capability was only extended to other SEMAs in 2009 with another amendment in terms of the *National Environmental Laws Amendment Act* 14 of 2009.

self-regulation with the use of other measures to reach the objectives of environmental protection.

Section 23A of the NEMA states that:

- (1) The Minister may, with a view to promote or facilitate integrated, environmentally sustainable and sound management, provide for–
 - (a) the guidelines on the development, content and use of a voluntary organisation or sector-based instruments;
 - (b) the circumstances under which such instruments may be submitted to and considered by the Minister.
- 2) Such instruments must, at least–
 - (a) integrate environmental considerations into decision-making;
 - (b) provide for the implementation of best environmental practice;
 - (c) promote the progressive adoption of environmentally sound technology, or amendments;
 - (d) promote sustainable consumption and production, including, where appropriate, eco-endorsement or labelling.
- (3) In his or her consideration of such instruments, the Minister may–
 - (a) as appropriate, engage with the organisation or sector concerned, as the case may be, on the content and use of its instrument if the organisation or sector concerned, as the case may be, requires the Minister to endorse or approve such instrument; or
 - (b) endorse or approve such an instrument.

Section 23A, in my view, now makes provision for voluntary environmental management tools. The Minister is now empowered to promote or facilitate integrated, environmentally sustainable and sound management⁴⁴¹ which could include “[l]egislative measures ... supported by appropriate, well-directed policies and programs implemented by the Executive ...” as was held in *Grootboom*.⁴⁴² It can be said that section 23A requires the Minister, as a promoter or facilitator of sound environmental management, to take all reasonably practicable steps to ensure that the overall environmental management takes place in a manner contemplated in section 24 of the *Constitution*.⁴⁴³

It is my contention that the amendment of the NEMA in 2013 to provide for the inclusion of self-regulation or voluntary environmental management tools offers a purer view of “other measures” contemplated in section 24(b) of the *Constitution* in order for the provision to “work”. Also, the amendment addresses the legal lacuna left

⁴⁴¹ Section 23A(1) of the NEMA.

⁴⁴² 2001 1 SA 46 (CC) at para. [69] B-D.

⁴⁴³ Refer to section 24(b) of the *Constitution* as discussed in paragraph 4.2 above.

by the initial NEMA. Where section 23(1) of the NEMA outlines the purpose of Chapter 5 in regard to IEM, the amendment of section 23A addresses voluntary environmental management instruments or self-regulation. Section 23A further stipulates that the Minister, in executing his or her duties can provide guidelines⁴⁴⁴ on the development, content and use of voluntary self-regulatory instruments to be used in, amongst others, the petrochemical industry.⁴⁴⁵ The central idea in this provision is that voluntary organisation or sector-based self-regulatory instruments are allowed to the extent that the Minister exercises his or her oversight role.⁴⁴⁶ It could, therefore, be argued that the oversight role of the Minister provided for in section 23A of the NEMA could be the basis for hybrid environmental governance where the petrochemical industry may be allowed to develop their own sector-based instruments for environmental management.⁴⁴⁷

In terms of section 23A(2) of the NEMA, the use of voluntary instruments in the petrochemical industry would as a minimum have to integrate environmental considerations into decision-making,⁴⁴⁸ provide for the implementation of best environmental practice,⁴⁴⁹ promote the progressive adoption of environmentally sound technology⁴⁵⁰ or promote sustainable consumption and production.⁴⁵¹ These provisions provide the clearest indication of the qualities and nature of a self-regulatory instrument to address possible issues and challenges within environmental

⁴⁴⁴ Section 23A(1)(a).

⁴⁴⁵ At the time of the study, such guidelines with regard to the content and use of voluntary or sector-based instruments for the petrochemical industry have not been published by the Minister.

⁴⁴⁶ This could be regarded as regulated self-regulation as discussed in paragraph 2.3 in Chapter 2.

⁴⁴⁷ See Chapter 2 and 5. The adoption of ISO standards constitutes a voluntary instrument by which an organisation manages its command and control requirements. ISO 14001:2015, ISO 9001:2015 and ISO 45001:2018 in the petrochemical industry, for example, could be regarded self-regulatory instruments. Likewise, the adoption of Responsible Care® in the sector could be viewed as a sector-based self-regulatory instrument and could be submitted to the Minister for endorsement or approval in terms of section 23A(3).

⁴⁴⁸ Section 23A(2)(a) of the NEMA. The industry should consider the environmental considerations of all affected and interested parties during public participation processes.

⁴⁴⁹ Section 23A(2)(b) of the NEMA. The petrochemical industry will have to implement best practice through environmentally friendly technologies in its operations to ensure high levels of environmental protection.

⁴⁵⁰ Section 23A(2)(c) of the NEMA. See above.

⁴⁵¹ Section 23A(2)(d) of the NEMA. The petrochemical industry uses non-renewable minerals, like coal as feedstock in most of its chemical production line output. New technological developments may provide alternative sustainable feedstock solutions.

governance.⁴⁵² The Minister of Environmental, Forestry and Fisheries⁴⁵³ may, therefore, engage⁴⁵⁴ with the petrochemical sector to consider, endorse or approve⁴⁵⁵ voluntary self-regulation environmental management tools with regard to the tool's content and application in the sector as provided in section 23(A)(3). These self-regulation governance tools may contain some coercive elements that organisations could use in their own self-regulatory environmental management governance strategies. Notwithstanding the option of regulated self-regulation seen above, other South African environmental legislation also provides for hybrid environmental governance discussed next.

4.4 Hybrid environmental governance and the law

Section 23A of the NEMA provides for self-regulation through a voluntary organisation or sector-based instruments.⁴⁵⁶ It could also be submitted as a form of hybrid environmental governance because not only can the industry develop and present governance instruments to the Minister for consideration and endorsement in terms of section 23A(3) of the NEMA, but it also has the opportunity with other stakeholders to engage actively with the state in environmental management strategies. My submission is also that some command and control instruments as discussed in Chapter 2 may contain elements of self-governance that are accepted by the Department of Environment, Forestry and Fisheries.

An application for authorisation in terms of the provisions of the NEMA where such activity will trigger the listed activities in the *EIA Regulations*, 2014 as amended will require an applicant to conduct either a BA⁴⁵⁷ or an EIA.⁴⁵⁸ The application must also comply with the relevant norms and standards. The overall purpose of these

⁴⁵² Armitage, De Loë and Plummer 2012 *Conversation Letters* 247-248. The authors draw attention to five key concepts or challenges in environmental governance, that is:

- (a) recognition of the importance of fit and scale of self-regulatory intervention;
- (b) fostering adaptiveness, flexibility, and learning among stakeholders;
- (c) coproducing knowledge from diverse sources influencing the governance partnerships;
- (d) understanding the emergence of new actors and their roles in the governance process; and
- (e) changing expectations about the accountability of state and non-actors.

⁴⁵³ Since June 2019, the Minister of Environment, Forestry and Fisheries.

⁴⁵⁴ Section 23A(3)(a).

⁴⁵⁵ Section 23A(3)(b).

⁴⁵⁶ See paragraph 2.4.2 in Chapter 2.

⁴⁵⁷ Required in terms of regulation 19 of the *EIA Regulations*, 2014 as amended.

⁴⁵⁸ Required in terms of regulation 23 of the *EIA Regulations*, 2014 as amended.

environmental assessments is that the applicant will indicate to the competent authority how environmental impacts as a result of the proposed activity were identified, and how these impacts will be mitigated and/or managed in an EMP by the organisation for improved proactive legal compliance. The BA or EIA process could include instruments such as strategic environmental impact assessments SEIAs,⁴⁵⁹ HIAs,⁴⁶⁰ LCAs,⁴⁶¹ EHIA⁴⁶² and SIAs.⁴⁶³

An EIA will assist the relevant competent authority in deciding whether the particular activity for which an authorisation is sought should be permitted.⁴⁶⁴ The approval by the competent authority can be construed as command and control regulatory oversight of the intended activity. In terms of section 24 of the NEMA, an authorisation is applicable for the entire life-cycle of a project and the organisation is required to act within the framework of the conditions attached to such authorisations.⁴⁶⁵ An organisation is required to submit various management plans to indicate how it will manage environmental impacts during operations or over the entire life-cycle of the project with a view to ensuring compliance.⁴⁶⁶ The content of the plans would be

⁴⁵⁹ The *White Paper on Environmental Management Policy for South Africa* 1998 169 defines a SEA as a "process to assess the environmental implications of a proposed strategic decision, policy, plan, programme, piece of legislation or major plan". Also see DEAT 2000 *Guideline Document: Strategic Environmental Assessment in SA*.

⁴⁶⁰ Required by section 38 of the *National Heritage Resources Act* 25 of 1999.

⁴⁶¹ An LCA could be included in an EMP. Also, refer to *Bareki NO v Gencor Ltd* 2006 1 SA 432 (T) in para 436A-I and 437A-C in regard to the court's view on the life-cycle principle contemplated in section 2 of the NEMA.

⁴⁶² See DOH 2010 *Environmental Health Impact Assessment Guidelines*. Also, refer to sections 20 and 88 of the *National Health Act* 61 of 2003 in regard to environmental health management and environmental health investigations.

⁴⁶³ A SIA focusses on social impacts which is a stand alone specialist study and is seldom required in an EIA. Also, see paragraph 2.4 in Chapter 2 above.

⁴⁶⁴ See *Silvermine Valley Coalition v Sybrand van der Spuy Boerderye and Others* 2002 (1) SA 478 (C) where the court alerted that the EIA is not a remedy for unlawful failure to comply to the ECA, its regulations and the provisions of the NEMA because the "EIA fits into a scheme which has been set up to ensure that official approval is granted before certain land can be put to specific uses, as defined with reference to various possible activities".

⁴⁶⁵ These conditions are determined by the identified environmental impacts determined during the BA or EIA process.

⁴⁶⁶ Examples of these management plans could be a community-based natural resources management plan, a veld management strategy, community forest arrangements, emergency planning, contingency plans, a waste management plan (WMP), an air quality management plan (AQAMP), a pollution prevention plan (PPP), a biodiversity management plan (BDMP), a mine and works plan (MWP), an EMP, and an EMP. These plans could be construed as forms of hybrid environmental governance and non-compliance to these will be sanctioned by the State in accordance with the relevant regulations. See paragraph 2.4 of Chapter 2 as well as paragraph 5.4 of Chapter 5.

developed by the applicant and may be subject to comments from the authorities. However, the main content of the plans will be determined by the applicant.

At the time of the study, the Minister published regulations laying down the procedure to be followed for the adoption of spatial tools or environmental management instruments as contemplated in sections 24(2)(c) and (e) of the NEMA.⁴⁶⁷ In terms of section 24(2)(e) of the NEMA, the Minister, or a member of the Executive Council (MEC) with the concurrence of the Minister, may identify activities contemplated in paragraphs (a) and (b) of the Act that, based on an environmental management instrument presented by an organisation and adopted in the prescribed manner by the Minister or an MEC,⁴⁶⁸ with the concurrence of the Minister, may be excluded from the requirement to obtain an EA from the competent authority.⁴⁶⁹ Such an environmental management instrument was adopted by the Minister in respect of the Square Kilometre Array (SKA) situated in the Northern Cape.⁴⁷⁰ The SKA submitted an Integrated Environmental Management Plan (IEMP)⁴⁷¹ to the Minister for approval⁴⁷² in which the organisation requested the Minister to exclude it from the EA requirement in terms of section 24(2)(e) of the NEMA, but with the organisation's undertaking to comply with its IEMP.⁴⁷³ The IEMP of the SKA provides a consolidated management plan including the minimum requirements for the construction and operation phases for phase one of the SKA. The IEMP also includes the environmental principles to be

⁴⁶⁷ See GN R542 in GG 42380 of 05 April 2019. Section 24(2) of the NEMA provides that the Minister, or an MEC, may identify-

(a) activities which may not commence without EA from the competent authority;
(b) geographical areas based on environmental attributes, and as specified in spatial development tools, in which specified activities may not commence without an EA from the competent authority; or in which specified activities may be excluded from the requirement to obtain an EA from the competent authority but must comply with prescribed norms and standards.

⁴⁶⁸ See GN R542 in GG 42380.

⁴⁶⁹ Also, read section 24(2)(c) and (e) of the NEMA.

⁴⁷⁰ The SKA Organisation, with its headquarters at Jodrell Bank Observatory, near Manchester, UK, was established in December 2011 as a not-for-profit company in favour of formalising relationships between the international partners and to centralise the leadership of the project. Eleven countries are currently members of the SKA Organisation – Australia, Canada, China, Germany, India (associate member), Italy, New Zealand, South Africa, Sweden, the Netherlands and the United Kingdom. The SKA telescope will be co-located in Africa and in Australia and the project is an international effort to build the world's largest radio telescope. See <https://www.ska.ac.za/about/the-project/>.

⁴⁷¹ See a copy of the IEMP of the SKA at <https://egis.environment.gov.za/SKAphase1>.

⁴⁷² See *Adoption of the integrated environmental management plan (IEMP) for the Square Kilometre Array (SKA) (Phase 1)* as an environmental management instrument published in GN R436 in GG 42323 of 22 March 2019 in terms of the NEMA.

⁴⁷³ Non-compliance with an EMP is an offence in terms of section 49A(1)(d) of the NEMA.

adopted, the environmental monitoring and control activities, as well as the long-term research monitoring programmes to be implemented by the SKA on its site in the Karoo.⁴⁷⁴ Similarly, the SKA undertakes to appoint an independent external Environmental Control Officer (ECO)⁴⁷⁵ who would proactively verify compliance with relevant environmental legislation, conditions of the adoption notice issued by the Minister, and the EMPr for the project. The ECO will also conduct internal environmental compliance audits at the SKA frequently at predetermined times throughout the construction phase to ensure adherence to the EMPr requirements while quarterly inspections will be conducted during the operational phase.⁴⁷⁶

In terms of section 24(2)(e) of the NEMA, the Minister excluded the SKA from obtaining authorisation for its phase 1 project identified in terms of section 24(2)(a) and (b) of the NEMA on approval of its IEMP. Environmental management at the organisation will be conducted as per the conditions set out in the Regulations.⁴⁷⁷ The adoption of the IEMP of the SKA at a national level by the Minister is a first in South Africa⁴⁷⁸ and opens the door for regulated self-regulation.⁴⁷⁹ It can therefore be argued that the approval of an IEMP by the Minister in terms of section 24(2) of the NEMA where the organisation is excluded from obtaining an EA was an endorsement by the Minister of the content and use of the IEMP by the SKA during the construction and operational phase of the project. This, in my view, can also be regarded as a form of hybrid environmental governance contemplated by section 23A(3)(a) and (b) of the NEMA where such governance provides the Minister with an opportunity to "[p]romote or facilitate integrated, environmentally sustainable and sound management".⁴⁸⁰ The next section contextualises legal audits within the South African legal framework.

⁴⁷⁴ See Media release 2019 at <http://www.ska.ac.za/media-releases/another-milestone-towards-the-construction-of-the-ska-radio-telescope-in-south-africa/>.

⁴⁷⁵ See Wessels *Understanding independent environmental control officers*.

⁴⁷⁶ See <https://egis.environment.gov.za/SKAphase1>.

⁴⁷⁷ See item 4 of GN R436 in GG 42323 of 22 March 2019.

⁴⁷⁸ See Media release 2019 at <http://www.ska.ac.za/media-releases/another-milestone-towards-the-construction-of-the-ska-radio-telescope-in-south-africa/>.

⁴⁷⁹ Refer to paragraph 2.4.1 of Chapter 2.

⁴⁸⁰ Section 23A of the NEMA.

4.5 Environmental legal compliance audits

The first environmental audit in South Africa was conducted by the then DEAT in 1981.⁴⁸¹

As stated earlier the purpose of a legal compliance audit⁴⁸² is not to ensure compliance but is a verification mechanism available to organisations to measure its level of compliance with permits and licence conditions and are divided into two categories:

- (a) those audits regarded as a command and control instrument; and
- (b) compliance audits conducted by the industry themselves in terms of their own governance strategies.⁴⁸³

4.5.1 Legal audits required by legislation

Legal audits required by legislation in the context of the study are provided for in the provisions of the *EIA Regulations, 2014* as amended,⁴⁸⁴ the MPRDA⁴⁸⁵ and the NEM:WA.⁴⁸⁶ No such requirements occur, for example, in the NEM:BA and NEM:AQA. These provisions in relation to legal compliance audits provide, amongst other things, guidance on the audit scope, the audit objectives and the audit criteria the petrochemical industry should use to conduct environmental audits. The *EIA Regulations, 2014* as amended specifically provide for the auditing of compliance with an EA, EMPr and closure plans.⁴⁸⁷ These compliance audits have a specific frequency of five years and holders of authorisations are required to submit the first audit report by 7 December 2019.

In terms of the transitional arrangements contemplated in Chapter 8 of the *EIA Regulations, 2014* as amended where an EA issued in terms of the ECA regulations or

⁴⁸¹ DEAT *Environmental Auditing, Integrated Environmental Management, Information Series 14* 4.

⁴⁸² Also refer to paragraph 2.5 of Chapter 2.

⁴⁸³ See paragraph 2.5 in Chapter 2 for a discussion.

⁴⁸⁴ Regulation 34 of the *EIA Regulations, 2014* as amended provides that environmental compliance audits have to be conducted against the conditions of all EAs issued to an organisation. EMPrs must be included in the audit scope.

⁴⁸⁵ Section 10 of the MPRDA refers to a performance assessment in respect of an audit.

⁴⁸⁶ See *Norms and Standards for the Storage of Waste* GN R926 in GG 37088 of 29 November 2013. The Norms and Standards provide for the frequency of auditing, the content as well as the submission of the audit reports to the regulator.

⁴⁸⁷ Refer to regulation 34 of the *EIA Regulations, 2014* as amended.

the previous NEMA regulations is still in effect by 8 December 2014, the EMPr associated with such an EA is subject to the requirements contained in Part 3 of Chapter 5 of the regulations. The first environmental audit report must be submitted to the competent authority by the due date of 7 December 2019 and thereafter at least every five years for the period during which such an EA is still in effect. It is therefore clear from the regulations that holders of authorisations are required to audit those historical EAs and RODs issued as well. The audit scope should therefore include historical conditions in circumstances where an authorisation that was issued for the construction phase of a project which was completed and compliance with the relevant EMPr has been concluded. Regulation 26(h) requires the compliance monitoring report to be made available for inspection and copying at the site of the authorised activity.

The audit report in respect of an organisation's compliance status must:

- (a) be prepared by an independent person external to the organisation and with the relevant auditing experience;⁴⁸⁸
- (b) include findings in a structured and systematic manner;⁴⁸⁹
- (c) contain the information required in terms of appendix 7 of the regulations;⁴⁹⁰ and
- (d) be conducted and submitted to the competent authority at the intervals stipulated and indicated in EA.⁴⁹¹

The audit scope should extend beyond a basic assessment of compliance status and would include an evaluation of the efficacy and adequacy of the organisation's EMPr and closure plans.⁴⁹² It is my view that in terms of regulation 34(3) this provision could allow a self-regulatory organisation to implement the relevant mitigation strategies in its pursuance of proactive environmental compliance. The increasing significant impact of self-regulatory EMSs such as ISO 14001⁴⁹³ that require organisations to continually improve their environmental management strategies can influence the auditing

⁴⁸⁸ Regulation 34(2)(a).

⁴⁸⁹ Regulation 34(2)(b).

⁴⁹⁰ Regulation 34(2)(c).

⁴⁹¹ Regulation 34(2)(d).

⁴⁹² Regulation 34(2)(a)(ii).

⁴⁹³ See Short and Toffel 2010 *Administrative Science Quarterly* 361-396.

orientation⁴⁹⁴ so that it “systematically documents and periodically evaluates how well an organization’s management practices and equipment are safeguarding the environment”.⁴⁹⁵

Proactive environmental management practices in an organisation’s EMS does not only seek to test the efficiency of the mitigating strategies in the EMPr or closure plan but will also measure the level of compliance with the conditions of the EA upon which an environmental audit has to pronounce as contemplated in regulation 34(3). In a self-regulatory environmental governance regime where continual improvement is one of the levers to ensure legal compliance, an organisation could significantly benefit from its adaptive ability to respond in a robust manner to an ever-changing legislative environment where goal posts to compliance seem to progressively being shifted.⁴⁹⁶

An organisation could also apply for an amendment of its EMPr or closure plan as a result of such a legal compliance audit⁴⁹⁷ which could influence its environmental governance strategy. These legal audits are therefore required by legislation. The *EIA Regulations*, 2014 as amended, require that a copy of the audit report shall within seven days of the date of submission of such a report to the competent authority be made available to anyone on request and be published on the company’s website.⁴⁹⁸

4.5.2 Voluntary internal company legal audits

According to Prajogo *et al* ISO 14001 certification for an organisation’s EMS is a complex system that involves various actors.⁴⁹⁹ Voluntary internal second-party or external third-party compliance audits could be described as either improvement-oriented or compliance-oriented auditing. The first category focuses on auditing. The

⁴⁹⁴ Prajogo, *et al* 2016 *International Journal of Auditing* 203.

⁴⁹⁵ Darnall, Seol and Sarkis 2009 *Accounting, Organizations and Society* 172.

⁴⁹⁶ James *et al* 2017 *Journal of Accounting & Organizational Change* 450-470.

⁴⁹⁷ Refer to regulation 35 of the *EIA Regulations*, 2014 as amended.

⁴⁹⁸ Regulation 34 of the *EIA Regulations*, 2014 as amended. In general, it is an offence for an EMI to disclose information about any of the company’s employees that was acquired during a routine inspection in terms of the NEMA or SEMA unless: (a) if the information was disclosed in compliance with the provisions of any law, for example in terms of section 36 of the *Promotion of Access to Information Act* 2 of 2000; (b) where the employee is ordered by a court of law to disclose the information; (c) if the information is disclosed to enable an employee to perform a function in terms of the NEMA or a SEMA; or (d) for the purposes of administration of justice contemplated in Section 31Q of the NEMA.

⁴⁹⁹ Prajogo, *et al* 2016 *International Journal of Auditing* 203.

role of the auditor is to help the organisation to improve the entity's employees, its processes, products and services. In the second category the role of auditor is exclusively to assess the entity's level of conformance against the standard.⁵⁰⁰ Research seems to suggest that an organisation's approach to a certification audit is determined by its audit orientation described above "and require[s] their auditors to audit in line with a firm's preferred audit orientation".⁵⁰¹ In hybrid environmental governance the audit orientation of an organisation will be to obtain legal compliance.

Internal compliance audits are required by the industry to maintain its ISO certification. In particular, clause 9.1.2 of ISO 14001:2015 requires the evaluation of compliance within an organisation. This evaluation can occur through (a) monitoring, measurement, analysis and evaluation; (b) inspections and (c) internal and external audits, while ISO 45001:2018 requires a determination of the organisation's legal and other requirements.⁵⁰² However, as prescribed in legislation, the content and execution thereof fall within the purview of an organisation in the context of regulated self-regulation. Compliance auditing conducted by the holder of an authorisation to evaluate its level of compliance against the conditions of the EMPr with subsequent reporting of non-compliances and related mitigating strategies seeks to achieve environmental protection. It is not clear whether these voluntary audits can be used against a company and whether confidential information obtained during an audit could be disclosed.⁵⁰³

4.6 Conclusion

In terms of the legal framework for self-regulation and hybrid environmental governance in the third broad objective of the study environmental protection could be undertaken in an innovative manner to address environmental concerns using

⁵⁰⁰ Power and Terziovski 2007 *Journal of Operations Management* 126-147.

⁵⁰¹ Castka and Corbett 2015 *Foundations and Trends in Technology, Information and Operations Management* 161-379.

⁵⁰² Clause 6.1.3 of both ISO 45001:2018 and ISO 14001:2015 requires the determination of compliance obligations within an organisation while clause 9.1.2 of both standards require the evaluation thereof. See Chapter 2 and 4 for a discussion.

⁵⁰³ Du Plessis and De la Harpe 2007 *SAJELP* 83-103. This question, however, falls outside the scope of this study. Where a 3rd party audit for an organisation was conducted by a legal advisor and an external attorney who acted in their professional capacity for the purpose of obtaining or providing legal advice such an audit report is confidential and legally privileged and should be protected from disclosure.

voluntary or sector-based instruments through self-regulation.⁵⁰⁴ A hybrid governance arrangement between various actors to give effect to section 24 of the *Constitution* as contemplated in section 23A of the NEMA could allow an organisation to reach its own as well as the state's objectives toward environmental protection. The amendment of the NEMA not only permits for self-regulation in environmental management practices within the industry but also provides the prospect for this role-player to work in a partnership in an enabling regulatory framework to realise the protection of the environment in a holistic and sustainable manner.

The *Green Paper* proposed, amongst other things, strict command and control and flexible self-regulation, whereas the *White Paper* focused on integrated and sustainable environmental management. IEM creates the platform for actors other than the state to contribute meaningfully towards the realisation of IEG. The objectives of sustainable environmental protection could be realised through the application of the industry's own hybrid environmental governance tools with government oversight. Also, the inclusion of legal audits to validate and or measure compliance with environmental management and governance tools provides reasonable and other legislative measures for the petrochemical industry to apply specialised input into its environmental governance strategy.

Hybrid environmental governance within the petrochemical industry has to satisfy the principles of IEM whereas environmental governance instruments implemented in the sector as a minimum must satisfy the requirements contemplated in section 23A(2) of the NEMA. The use of voluntary organisation or sector-based instruments by the sector in terms of section 23A of the NEMA, together with section 24 of the *Constitution*, provides the legal framework for self-regulation. Environmental management plans, like an EMPr, an AQAMP and an MWP, as well as various assessment instruments, offer a suitable vehicle for sustainable environmental compliance in complex organisations. In my view, a combination of these environmental governance tools in a hybrid arrangement between various stakeholders could assist an organisation in

⁵⁰⁴ See paragraph 1.2 in Chapter 1.

attaining legal compliance with permit and licence conditions within the legislative and regulatory framework in which the entity is authorised to operate.

The application of hybrid environmental governance as a viable option available to the petrochemical industry to manage and obtain environmental legal compliance is suggested. The recent publication of the regulations by the Minister does not only offer guidelines for the adoption of environmental management instruments but positions the facilitative role of the Minister for sound and sustainable environmental management to give effect to the objectives of section 24. This indicates the establishment of a new approach to environmental protection through hybrid environmental governance.

The next chapter presents a case study of a petrochemical company where a hybrid environmental governance approach gives prominence to its environmental governance strategy in managing legal compliance.

Chapter 5

Self-regulation in the petrochemical industry

5.1 Introduction

Voluntary instruments are widely used in different industries across the globe and have been identified as “private mechanisms established, monitored and enforced by private actors to govern their own conduct”.⁵⁰⁵ Pure self-regulation in the petrochemical industry is not an option,⁵⁰⁶ as discussed in Chapter 2. However, hybrid environmental governance with government oversight can be proposed to supplement state-led command and control as a feasible alternative in pursuance of legal compliance.

This chapter presents a case study⁵⁰⁷ and focuses on how self-regulation, with the application of hybrid environmental governance instruments⁵⁰⁸ and management standards, is used for self-regulation⁵⁰⁹ in the Secunda Chemical Operations (SCO).⁵¹⁰ Self-regulation could assist the organisation in reaching the objectives of environmental protection while the level of compliance to authorisation, exemptions, directives, permit and licence conditions is evaluated through legal audits.⁵¹¹

5.2 The petrochemical industry in South Africa

Statistics South Africa (Stats SA)⁵¹² submits that the chemical sector in South Africa contributes strongly to the manufacturing economy in the country. Stats SA indicates that coke, petroleum, chemical products, rubber, plastic, glass and other non-metallic mineral products combined constituted 23.2% of manufacturing in South Africa in

⁵⁰⁵ Prakash 2000 *Business & Society* 183-209. The SCO has implemented ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007 and Responsible Care® as its voluntary and sector-based instruments.

⁵⁰⁶ See Chapter 2 for a discussion.

⁵⁰⁷ See paragraph 1.2 in Chapter 1.

⁵⁰⁸ Paragraph 5.4.1.

⁵⁰⁹ Paragraph 5.4.2.

⁵¹⁰ The SCO is a division of Sasol South Africa Limited (Sasol SA Ltd). Sasol South Africa (Pty) Ltd (Reg. no: 1968/013914/07) was converted from a private company to a public company and is now known as Sasol South Africa Limited (Reg. no: 1968/013914/06), with effect from 15 March 2018.

⁵¹¹ Paragraph 5.5.

⁵¹² See Statistics South Africa 2018 http://www.statssa.gov.za/?page_id=1854&PPN=P3041.2.

2018. The Small Enterprises Development Agency (SEDA)⁵¹³ notes that, according to the Department of Trade and Industry (DTI), the chemical sector is the largest of its kind in Africa and is highly complex and diversified. From a strategic perspective, the sector is segmented into 11 sub-sectors, excluding synthetic textile fibres which are listed under the textile industry. The chemical sector's production in South Africa is estimated in the chart in Figure 5.2.1 below.

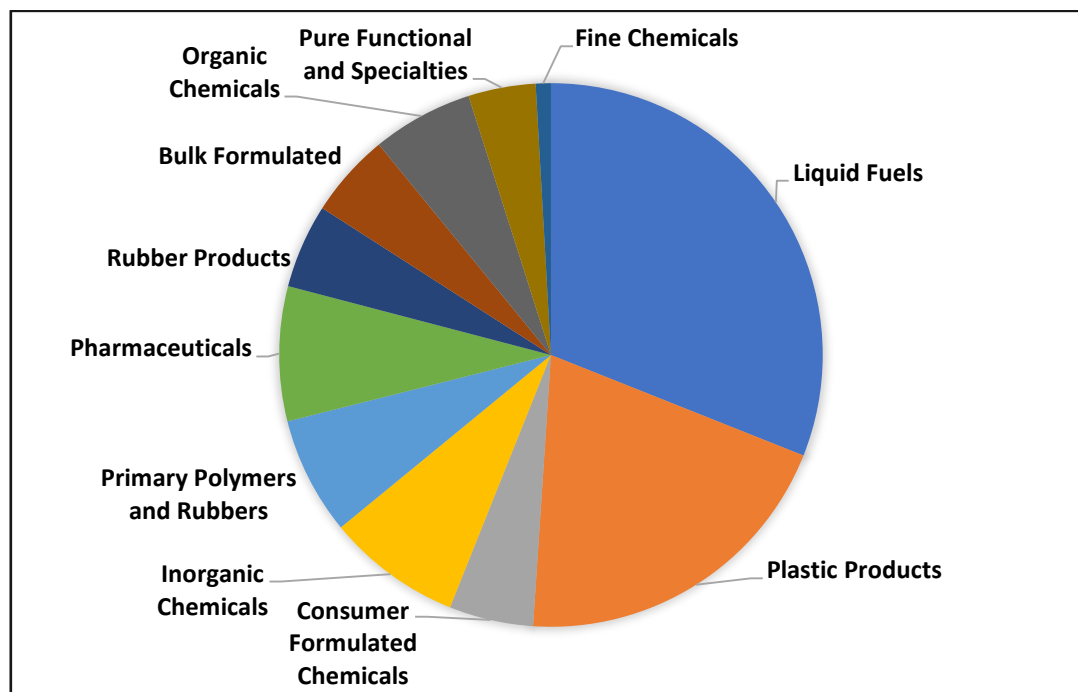


Figure 5.2.1: The South African chemical industry output⁵¹⁴

⁵¹³ Small Enterprises Development Agency 2013 <http://www.seda.org.za/Publications/Pages/Research-Publications.aspx> 58.

⁵¹⁴ Small Enterprises Development Agency 2013 <http://www.seda.org.za/Publications/Pages/Research-Publications.aspx> 58.

SEDA⁵¹⁵ provides an upstream chemical sector analysis of the chemical industry in South Africa as indicated in Table 5.2.1 below.

Table 5.2.1: Upstream Chemicals Sector Analysis⁵¹⁶

Sub-sector	Product Examples	Major South African Operations
Liquid fuels	Diesel, petrol, jet fuel, paraffin, liquefied petroleum gas	Chevron (Caltex), Engen refinery (Enref), Natref (Sasol JV with Total SA), Sapref (Shell and BP), PetroSA, Sasol Synfuels
Commodity organics	Ethylene, aromatic chemicals (benzene, toluene, xylene), ethanol, solvents, waxes, phenols	Sasol, Chemserve, Industrial Oleochemicals, Senmin, Enref, Shell Chemicals
Primary polymers and rubbers	Polyvinyl chloride (PVC), polyethylene terephthalate (PET), polyethylenes, styrene-butadiene rubber and latex	Sasol Polymers, Safripol, Bayer, Karbochem, Hosaf Fibres, SANS Fibres
Commodity inorganics	Ammonia, aluminium sulphate, caustic soda, hydrochloric acid, industrial gases (i.e. argon, hydrogen, oxygen, nitrogen), titanium dioxide	Omnia, Sasol, AECI, Foskor, NCP Chlorchem, AEL, Afrox, Air Products, PetroSA, Zetachem, Huntsman Tioxide, Chemical Initiatives
Fine chemicals	Pharmaceutical ingredients, pesticide actives, flavour chemicals	Fine Chemical Corporation, Dow Agrosciences, Illovo Sugar

SEDA⁵¹⁷ states that the chemical industry in South Africa consists of three main organisations with different subsidiaries, namely:

- (a) Sasol SA Ltd⁵¹⁸ group of companies;
- (b) Omnia Holdings;⁵¹⁹ and

⁵¹⁵ Small Enterprises Development Agency 2013 <http://www.seda.org.za/Publications/Pages/Research-Publications.aspx> 56.

⁵¹⁶ Small Enterprises Development Agency 2013 <http://www.seda.org.za/Publications/Pages/Research-Publications.aspx> 56.

⁵¹⁷ Small Enterprises Development Agency 2013 <http://www.seda.org.za/Publications/Pages/Research-Publications.aspx> 56

⁵¹⁸ See <https://www.sasol.com/>.

⁵¹⁹ See <http://www.omnia.co.za/>.

(c) The AECI Group.⁵²⁰

5.3 Overview of Sasol South Africa Limited

This chapter is confined to one of the operating manufacturing entities (OMEs) of the Sasol SA Ltd group of companies, called the SCO.⁵²¹ The SCO is a division in Sasol SA Ltd with its operations in Secunda and produces a diverse range of products.⁵²² Sasol SA Ltd was established in the 1950s when the first coal to liquid (CTL) plant was built in Sasolburg.⁵²³ Today, Sasol SA Ltd through its operations in Secunda is among the world's largest petrochemical operations and manufactures more than seven million tons of fuels and chemical feedstock a year in their primary production phases.

Sasol SA Ltd is an integrated energy and chemical establishment comprising several business units with its head office in Sandton, South Africa. The company is listed on the Johannesburg Stock Exchange. The Company Group employs over 30 000 people in 32 countries.⁵²⁴ The company plays a vital role in fuelling South Africa, and supplies through the wholesale and retail sectors about 30% of South Africa's liquid fuels from coal and crude oil, including diesel, petrol, jet fuel, paraffin and liquefied petroleum gas.⁵²⁵ The corporation comprises a coal-mining operation, exploration, production of oil, fuel and gas as well as industrial explosives, fertilizers, different chemicals such as polypropylene, ethylene, propylene, solvents, ethanol, ethanol, as well as a range of alcohols, ethyl acetate and co-monomers. Besides producing liquid and gaseous fuels, the group produces more than 200 chemical products. Most of the country's chemical

⁵²⁰ See <http://www.aeci.co.za/>.

⁵²¹ The SCO hub forms part of the Southern African operations and is the consolidation of all the chemical operating facilities in Secunda, along with Site Services, Infrastructure Maintenance and Product Logistics Services. Refer to Figure 5.3.1 below for an overview of the SCO.

⁵²² The SCO's product portfolio includes: Industrial explosives; Fertilisers; Polypropylene; Ethylene and Propylene; Solvents (acetone, methyl ethyl ketone); Ethanol; n-Propanol, iso-propanol; SABUTOL™, PROPYLOL™; Mixed C3 and C4 alcohols; mixed C5 and C6 alcohols; High Purity Ethanol, and Ethyl Acetate) as well as the co-monomers; 1-hexene; 1-pentene; 1-octene and detergent alcohol (Safol™).

⁵²³ Majozi and Veldhuizen 2015 *American Institute of Chemical Engineering (AIChE)* 46. See <https://www.aiche.org/resources/publications/cep/2015/july/south-africas-chemicals-industry>.

⁵²⁴ See <https://www.sasol.com/about-sasol/overview-0>.

⁵²⁵ Jeffrey 2018 <https://www.fin24.com/Opinion/the-case-for-coal-and-nuclear-megaprojects-20181231-2>; Small Enterprises Development Agency 2013 <http://www.seda.org.za/Publications/Pages/Research-Publications.aspx> 39.

organic and building blocks are manufactured at its various plants for different clients and markets.⁵²⁶

The synfuels and chemical interests of Sasol SA Ltd rely extensively on its coal mining operations situated in Mpumalanga and the Free State, two of South Africa's provinces.⁵²⁷ The company is one of the world's leading coal-mining enterprises and operates one of the world's largest underground coal-mining complexes. It mines more than 50 million tons of coal per year which represents approximately 22% of all coal mined in South Africa.⁵²⁸

Figure 5.3.1 below provides a simplified overview of the operations of the SCO in Secunda, Mpumalanga which represent the case study. Stockfeed for the SCO includes coal and natural gas. The SCO has three main plants, namely the Nitro, Polymers and Solvents plants. These plants are supported by seven non-operational functional departments while Site Services also provide specialised support illustrated in Figure 5.3.1 below. In total, the SCO has nine business units that are headed by a Vice-President (VP) who reports to the Senior Vice-President (SVP).⁵²⁹ The SCO also provides ethylene via an underground gas pipeline to the Sasolburg Operations which is another division of Sasol SA Ltd situated in the Free State.

⁵²⁶ Small Enterprises Development Agency 2013 <http://www.seda.org.za/Publications/Pages/Research-Publications.aspx> 39. Research conducted by SEDA indicates that the petrochemical sector mainly provides two sets of organic building blocks: olefins and aromatics. The report indicates that olefins are the building blocks for polymers and oligomers which are used in the manufacturing of products such as plastics, resins, elastomers and lubricants. Also, aromatics are used in the manufacturing of a wide range of products such as solvents, adhesives and detergents. SEDA asserts that there is a global movement away from the usage of solvents which contain benzene, toluene and xylene (BTX isomers) due to the carcinogenic nature of the chemicals.

⁵²⁷ Jeffrey 2018 <https://www.fin24.com/Opinion/the-case-for-coal-and-nuclear-megaprojects-20181231-2>. Sasol SA Ltd has many international initiatives and supplies more than 200 products to customers in 90 countries and is involved in several plants in different parts of the world using its patented coal to liquid (CTL) or gas to liquid (GTL) technology. The company has grown remarkably since its inception, to become one of South Africa's most significant contributors to socio-economic development.

⁵²⁸ Majozi and Veldhuizen 2015 *American Institute of Chemical Engineering* (AIChE) 50. Coal is the main export revenue generator in South Africa as more than 25% (almost 70 million tons per annum) is exported. The major coal reserves are situated in Limpopo, Mpumalanga, Kwa-Zulu Natal, Eastern Cape and the Free State with the largest concentration of coal mining operations situated near the towns of Ermelo, Witbank and Secunda. See <https://www.aiche.org/resources/publications/cep/2015/july/south-africas-chemicals-industry>.

⁵²⁹ The nine business units in the SCO are Human Resources, SHE, Corporate Affairs, Site Services, Polymers and Nitro, Technical Support, Supply Chain, Solvents, Finance and IM.

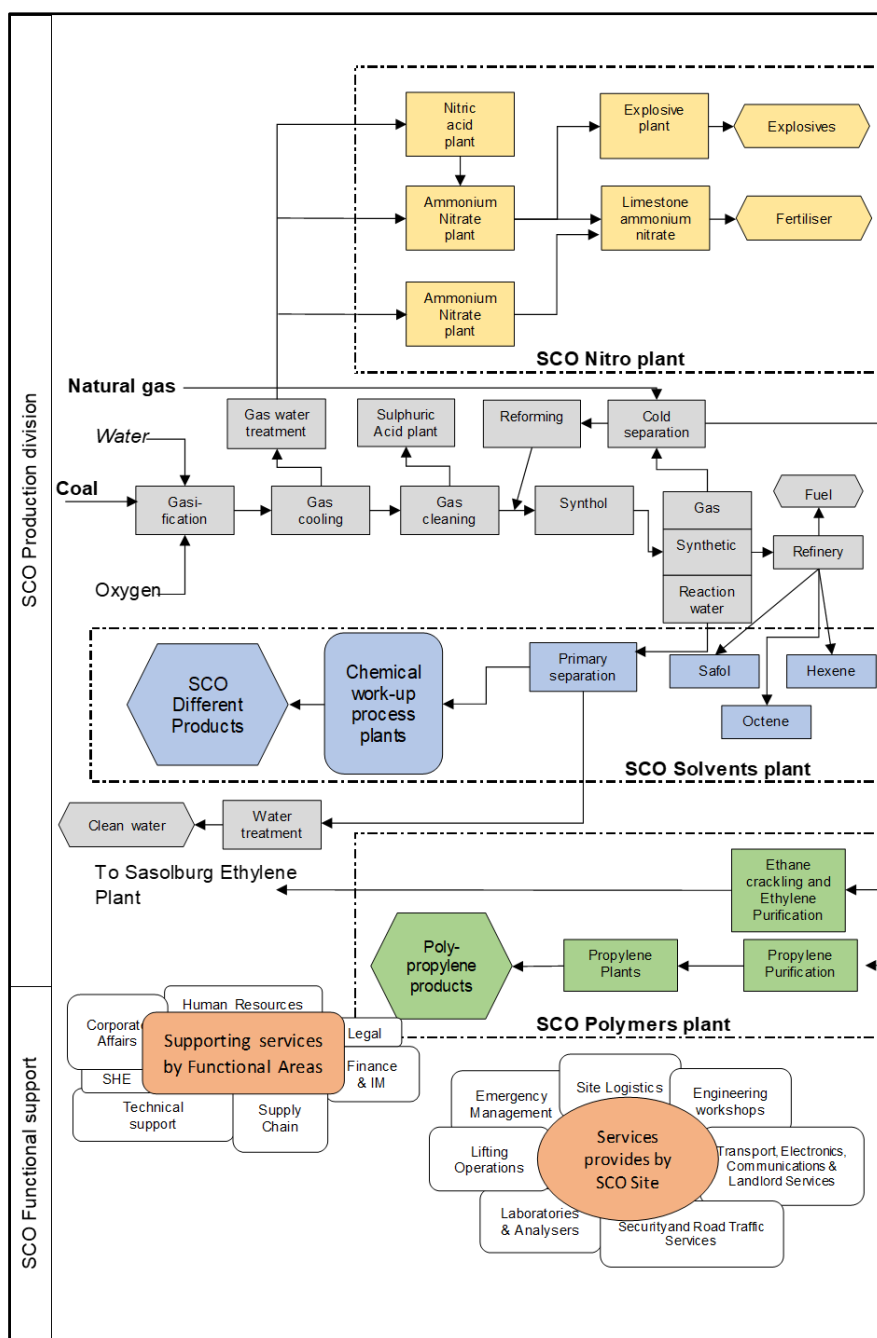


Figure 5.3.1: Overview of the SCO at Sasol Secunda Operations

The nine business units of the SCO as illustrated in Figure above 5.3.1 are divided into two categories, namely functional and production. The functional section delivers a supporting service to the production division which consists of three plants, Nitro, Polymers and Solvents.⁵³⁰ The functional section responsible for safety, health and

⁵³⁰ Refer to Figure 5.3.1.

environment (SHE) legal compliance in the SCO is the SCO SHE that fulfils this function through specialist functionaries, namely Occupational Safety, Process Safety, Environment, Occupational Health, Behaviour, Product Stewardship and SHE Governance, Assurance, Risk and Reporting (GARR).⁵³¹

5.4 Hybrid environmental governance at the Secunda Chemical Operations

In terms of the 2018 *Sustainability Report* of Sasol SA Ltd⁵³² the company is:

committed to complying with all applicable laws and obligations arising from our environmental authorisations. On-going compliance is managed, by dedicated environmental managers with the support of subject matter experts for water, waste, air quality, climate change and land and biodiversity management. It is enabled by our Group Compliance Policy and associated Compliance Programmes.

These associated compliance programmes in the SCO embrace the holistic framework of IEM as discussed in Chapters 2 and 3 and are influenced by the Sasol Group Compliance Policy in its environmental governance approach.⁵³³ In terms of the 2017 Sasol Sustainability Report,⁵³⁴ Sasol SA Ltd is committed to compliance with all applicable laws and requirements arising from its EA and AEL.⁵³⁵ The company's

⁵³¹ In terms of the SCO *Management Systems Manual*, the Safety Health Environment Governance Assurance Risk and Reporting (SHE GARR) team enables and optimises the sustainable execution of SHE practices within the SCO to realise sustainable SHE excellence through the involvement of various stakeholders. SHE GARR has ensured understanding and alignment of the SHE management system to achieve zero harm and sustainable legal compliance. Specialist areas in SHE GARR to execute its mandate include:

- (a) *Enablement, Compliance & Assurance*: Providing fit-for-purpose SHE supports to the SCO businesses in the drive for effective and efficient operations through among others continuous improvement plans, systems, processes and people capacity and competence, monitoring, auditing and verifying of SHE practices and performance.
- (b) *Mobilisation, Governance & Assurance*: Providing governance on SHE processes by reporting to and participating in the SCO and Sasol SA Ltd group SHE governance structures to enable leadership to improve SHE performance. Structured communication to provide a platform to ensure that all SHE stakeholders are informed and engaged in legal compliance interventions.
- (c) *Regulatory Enablement*: Integrating the requirements for legal compliance and relevant management system audits for certification and assurance purposes by providing the required environmental governance mechanisms.
- (d) *Risk & Assurance Process*: Enabling a risk-based approach to SHE management.

⁵³² See <http://www.integratedreport.sasol.com/sustainability/download-manager.php>. These *Sustainable Reports* are a requirement in terms of the King IV Report for Corporate Governance.

⁵³³ The Responsible Care® Programme used in the petrochemical sector is an example of a sector-based instrument. See chapter 4 for a discussion on the relevance of RCP in the sector.

⁵³⁴ Sasol 2017 *Sustainability Report*. See https://www.sasol.com/extras/SR_2017/pdf/sustainability-report.pdf.

⁵³⁵ Own experience: The SCO seeks to ensure compliance to all its authorisations issued in respect of its operations at all the plants.

environmental managers and subject matter experts support operations in managing compliance with these legal and other requirements.⁵³⁶ The company also reports incidents and deviations from regulatory requirements as well as EA limits. The company has adopted a transparent approach to environmental compliance management and proactively engages with the authorities and local communities with regard to any possible compliance challenge.⁵³⁷ The entity discloses non-compliance with conditions of authorisations and the management thereof to the relevant competent authorities.⁵³⁸

In terms of the One Sasol SHE Excellence approach of Sasol SA Ltd as applied in the SCO, legal and regulatory compliance are managed by:

- (a) following the SCO's SHE compliance programme that is based on the Sasol Group compliance methodology;
- (b) ensuring compliance with applicable SHE legal requirements established by Sasol Group and business-specific controls within the SCO;
- (c) updating and monitoring the SCO's business controls regularly, particularly when there are changes to legal requirements arising from changes in the law, permit and licence conditions and where new permits or licences are issued;
- (d) having a process in place to monitor the development of newly amended legislation and ensuring that the compliance requirements are well understood and communicated to facilitate compliance in all business units of the SCO;
- (e) conducting compliance assessments, internal and external (independent) legal compliance audits or authority inspections to verify the SCO's SHE legal compliance.

Fulton and Rejeski⁵³⁹ submit that "[e]nvironmental goal-setting in organisations often depended on high-level buy-in from chief executive officers, and was increasingly

⁵³⁶ Sasol 2017 *Sustainability Report* 16.

⁵³⁷ Own experience. The SHE GARR section at the organisation is responsible to drive SHE legal compliance which includes: SHE Mobilisation and Governance Assurance, SHE Enablement and Assurance, SHE Risk and Assurance and SHE Regulatory Enablement. These fields of speciality in the SHE GARR team within the organisation is responsible to ensure SHE legal compliance with legal and other requirements for the operations at the company's Secunda Operations.

⁵³⁸ Sasol 2017 *Sustainability Report* 17.

⁵³⁹ Fulton and Rejeski 2018 *Environmental Law Reporter* 10781.

validated through external stakeholders such as environmental NGOs or international standard-setting bodies such as the International Organization for Standardization". Such high-level buy-in indicates SHE governance within the SCO. Various SHE governance tools are included in the compliance programme of the SCO in a self-regulatory approach towards proactive legal compliance. Figure 5.4.1 below illustrates the SHE governance and assurance framework of the SCO.

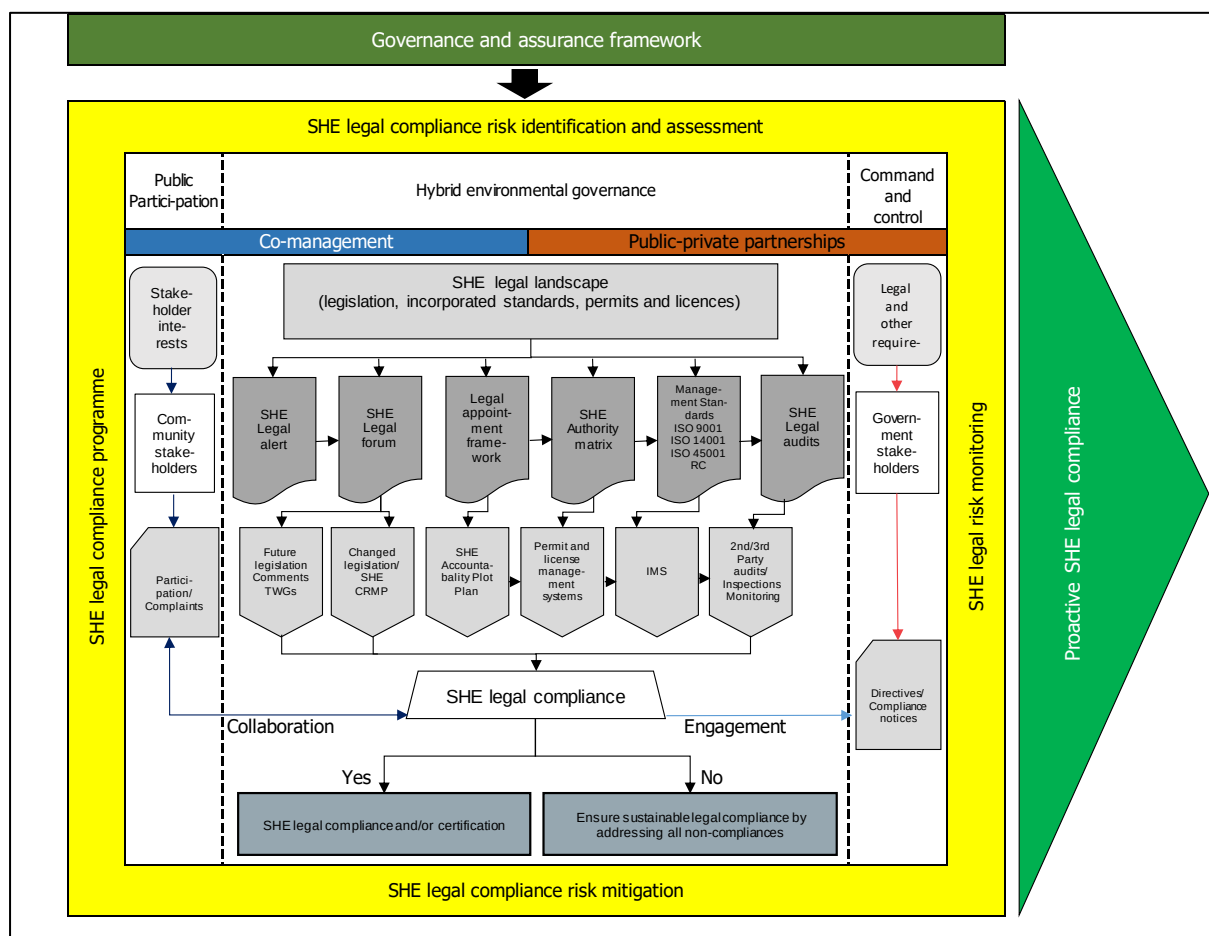


Figure 5.4.1: The SHE governance and assurance framework of the SCO⁵⁴⁰

Governance and assurance in the SCO take an integrated approach within a command and control regime provided by a state-led legislative framework to allow the company

⁵⁴⁰ Adapted from the SCO SHE legal governance and assurance framework to provide a simplified overview of environmental legal compliance in the SCO.

to be a surrogate regulator of its business activities.⁵⁴¹ The SCO engages the state to ensure sustainable compliance practices with permit and licence conditions, while public participation is central to the application for new permits and licences as illustrated in Figure 5.4.1 above. Self-regulation within the OME seeks to facilitate engagement with all the relevant community stakeholders and where possible accommodate opposing or conflicting interest to the operations of the SCO.⁵⁴² The outcome of OME self-regulation is two-fold: (a) SHE legal compliance, assurance and certification or (b) ensuring sustainable legal compliance by addressing all non-compliances with the permit and licence conditions.⁵⁴³ Notwithstanding the willingness of the OME to report non-compliance timeously, this in itself constitutes a business risk. Therefore, the legal compliance programme of the SCO applies a risk-based methodology on the basis of SHE legal risk identification and assessment, compliance risk mitigation and risk monitoring.

An integrated approach with the implementation of ISO 9001, ISO 14001, OHSAS 18001 and Responsible Care® certification, internal and external SHE legal audits, site inspections and regulatory compliance monitoring of permits and licence conditions is among the fundamental features of the self-governance programme within SCO SHE governance.⁵⁴⁴ The objective of the SCO is to create an ethical and environmental compliance culture associated with the Sasol SA Ltd brand, which is achieved through self-regulation of its business activities as well as compliance with authorisation, permits and licence conditions. Also, the SCO sets to enact its own regulatory standards above the minimum legislative requirements towards environmental protection contemplated by the state.

This objective may be found to enhance sustainability and economically viable products to its client base while operating within the provisions of environmental

⁵⁴¹ Environmental governance emanating from the state-led legislative regime is rooted in section 24 of the *Constitution* and given effect to by the NEMA as discussed in Chapter 4.

⁵⁴² Refer to paragraph 2.3.2 in Chapter 2 for a discussion on the drivers of self-regulation.

⁵⁴³ Non-compliance to legal and other requirements within the organisation could create business risks for the entity which are addressed in a sustainable manner with full support and commitment from company management.

⁵⁴⁴ This regulatory approach is supported by the One Sasol SHE Excellence methodology that is followed throughout Sasol SA Ltd.

legislation.⁵⁴⁵ The SCO is certified in the management standards the company adopted. This certification is not only based on legal compliance but is an affirmation of objective and demonstrable adherence and fulfilment to its compliance obligations contemplated in clause 9.1.2 of both ISO 14001:2015 and ISO 45001:2018. The management of environmental impacts as addressed by these voluntary organisation or sector-based instruments illustrated in Figure 5.4.1 above are discussed below.

5.4.1 Environmental governance in the SCO

Self-regulation in the governance methodology undertaken in the SCO is guided by the SHE legal landscape⁵⁴⁶ for the OME. This legal landscape is a combination of applicable legislation, incorporated South African National Standards (SANS) or ISO standards, as well as permits and licences issued to the entity from a typical command and control perspective. The SHE legal landscape also provides for the SCO EMP, AQAMP, WMP, BDMP, and the emergency management plan, amongst other things.⁵⁴⁷ These governance instruments represent a combination of command and control and self-regulatory tools to deliver hybrid environmental governance tools.

In line with the One Sasol SHE Excellence approach, the legal landscape is frequently updated with an SHE legal alert to reflect any possible legislative changes that may have an impact on the business. Amendments to legislation are discussed in a quarterly SHE legal forum that monitors the development of new or amended legislation and ensures that the compliance requirements are well understood and communicated within the regulated community of the SCO to facilitate compliance. The SHE legal forum also tracks comments from the SCO to draft legislation and it

⁵⁴⁵ Eisentein 2014 <https://www.theguardian.com/sustainable-business/blog/sustainability-business-sense-profit-purpose>. Also, see Grayson and Kjelleren 2015 https://www.americanbar.org/publications/blt/2015/01/03_grayson.html.

⁵⁴⁶ Nel and Alberts "Environmental management" 21. According to authors a legal landscape provides an overview of the minimum legislative and operational standards relevant to the company against which legal compliance has to be assured. The legal landscape is also commonly known in the SCO as the legal register that is aligned with planned activities and projects listed in the entity's business strategy. Also, the legal register indicates "who" must do "what", "when" and "how" as well as "which resources" will be needed to obtain the required legal compliance in a sustainable way for the said period.

⁵⁴⁷ Refer to paragraph 2.4 in Chapter 2 and paragraph 4.4 in Chapter 4 for a discussion.

provides a supporting function for technical work groups (TWGs) that provide technical input into various draft regulations requested from different government departments.

Furthermore, the SHE legal landscape of the SCO provides a guide to accountability and liability in the organisation. Self-regulation in the SCO is linked to the principle of strict liability⁵⁴⁸ as a result of the SHE accountability attached to the legal appointment system upheld in the entity.⁵⁴⁹ As illustrated in Figure 5.3.1 above, each of the nine VPs who report to the SVP⁵⁵⁰ carries a legal appointment.⁵⁵¹ Different legal

⁵⁴⁸ The notion of strict liability in terms of the *Occupational Health and Safety Act* 93 of 1985 has been explained in *Joubert v Buscor Proprietary Limited* (2013/13116) [2016] ZAGPPHC 1024. In terms of section 8 of the OHSA there is duty on the employer [in the SCO this would be a person legally appointed in terms of section 16(1) or section 16(2) of the OHSA] to provide and maintain a workplace for all the employees that is safe and without risk to the health of such employees. The same duty applies to persons other than employees in terms of section 9 of the Act. The wording of these provisions includes the word "shall" which according to the court in *Joubert v Buscor Proprietary Limited* at para. [34] "held... that OHSA imposes dually, a duty and a standard of care on an employer resulting in a strict liability of an employer". The court further held in para. [32] that on the plain reading of the act "the liability of the employer is a strict one". This means that in circumstances where the duty of care by the employer in the SCO is not correctly discharged, such a person could be held liable for negligent behaviour where such behaviour would constitute an offence. In contemplation of strict liability and to ensure compliant behaviour a legal appointment is signed by a legal appointee which clearly outlines the duties of that particular person and indicates his or her responsibilities. Also see Kidd "Criminal measures" 249. The author contends that strict liability is currently not used in the South African legislation and further asserts that there is no need for the use of strict liability in the prosecution of environmental offences.

⁵⁴⁹ The legal appointment framework of Sasol SA Ltd prescribes that the required legal appointments shall be made in writing in terms of various regulations and sections contained in the *Diving Regulations* published under GN R41 in GG 32907 of 29 January 2010; *Pressure Equipment Regulations* published under G R734 in GG 32395 of 15 July 2009; *Driven Machinery Regulations* published under GN R540 in GG 38905 of 24 June 2015; *Electrical Installation Regulations* published under GN R242 in GG 31975 of 6 March 2009; *Explosives Act* 26 of 1956; *Explosives Regulations* published under GN R109 in GG 24272 of 17 January 2003; *Fire Brigade Services Act* 99 of 1987; *General Administrative Regulations* published under GN R929 in GG 25129 of 25 June 2003; *General Machinery Regulations* published under GN R1521 in GG 11443 of 5 August 1988; *General Safety Regulations* published under GN R1031 in GG 10252 of 30 May 1986; *Construction Regulations* published under GN R84 in GG 37305 of 7 February 2014; *Hazardous Substances Act* 15 of 1973; *Lift, Escalator and Passenger Conveyor Regulations* published under GN R828 in GG 33561 of 17 September 2010; *NEM:AQA*; *NEM:WA*; *National Key Points Act* 102 of 1980; *National Railway Safety Regulator Act* 16 of 2002; *Occupational Health and Safety Act* 85 of 1993; *Pharmacy Act* 53 of 1974; *Regulations Regarding Safety Management Systems, Safety Management System Reports, Railway Occurrence Reporting and Assessment of Performance of Operator* published under GN R866 in GG 26594 of 20 July 2004; *Regulations Regarding the Appointment of Guards by Owners of National Key Points and the Powers of such Guards* published under GN R1731 in GG 8338 of 13 August 1982; *Regulations Relating to Group IV Hazardous Substances* published under GN R247 of 26 February 1993; *Regulations Relating to the Practice of Pharmacy* published under GN R1158 in GG 21754 of 20 November 2000.

⁵⁵⁰ As per Figure 5.3.1 the SCO comprised of nine business units each with a Vice President (VP) that is legally appointed in terms of section 16.2 of the *Occupational Health and Safety Act*. Each VP reports to the Senior Vice President (SVP) who is appointed in terms of section 16(1) of the Act.

⁵⁵¹ A legal appointment describes the responsibility of each VP in regards to the processes and governance requirements of his or her particular business unit and a plot plan is attached to each legal appointment.

appointments in terms of business processes are affected in SCO in terms of the legal appointment framework of Sasol SA Ltd. The SHE accountability attached to the VP and SVP in terms of sections 16(1) and 16(2) of the OHSA⁵⁵² is based on the principle of the duty of care contemplated in section 8 of the OHSA,⁵⁵³ section 28(1) of the NEMA, section 19 of NWA and section 29 of NEM:AQA.⁵⁵⁴ Also, in terms of clause 5.1 of ISO 14001:2015 and ISO 45001:2018 the top management within SCO shall demonstrate its leadership and commitment to the organisation's adopted EMS and OHSMS respectively.

The duty of care principle⁵⁵⁵ in the OHSA requires a VP at the SCO to adopt a proactive approach to the health and safety of employees because in this circumstance the "[d]uty of care means that the employer, acting personally or through its employees or agents, must take reasonable care for the safety of its employees".⁵⁵⁶ The same proactive approach with regard to environment governance is intended in section 28(1) of the NEMA. A proactive approach to the duty of care results in proactive environmental compliance that underscores the objective of self-regulation.⁵⁵⁷

Another function of the legal landscape, as illustrated in Figure 5.4.1 above, is to draw up an SHE authority matrix per VP which contains a list of EAs, permits, licences, exemptions and concessions, amongst other things, applicable in that particular section.⁵⁵⁸ The authority matrix of the SCO pronounces in detail the type of assurance

⁵⁵² The provisions of the *Mine Health and Safety Act* 29 of 1996 are not applicable within the SCO.

⁵⁵³ Section 8(1) of the OHSA contemplates that "Every employer shall provide and maintain, as far as is reasonably practicable, a working environment that is safe and without risk to the health of his employees". Also, the duty of care is not only applicable to employees, but members of the public are protected by the provisions of section 9(1) which contemplates that "Every employer shall conduct his undertaking in such a manner as to ensure, as far as is reasonably practicable, that persons other than those in his employment who may be directly affected by his activities are not thereby exposed to hazards to their health or safety". In *Health Resource Group and others, v Minister of Labour and others* 2015 (4) ALL SA 78 (GP) the court confirmed that the employer's duty of care applies to third parties other than employees. The principle on the duty of care has been applied *ex post facto* in *Hichange Investments (Pty) Ltd v Cape Produce Company (Pty) Ltd t/a Pelts Products and Others* 2004 (2) SA 393 (E).

⁵⁵⁴ Refer to paragraph 4.5 of Chapter 4.

⁵⁵⁵ Also refers to section 28 of the NEMA.

⁵⁵⁶ Le Roux 2011 *The Journal of The Southern African Institute of Mining and Metallurgy* 531. Also, see *Van Deventer v Workmen's Compensation Commissioner* 1962 (4) SA 28(T) and *Oosthuizen v Homegas (Pty) Ltd* 1992 (3) SA 463 (T).

⁵⁵⁷ Refer to paragraph 2.3 in Chapter 2.

⁵⁵⁸ The SCO authority matrix contains, amongst others, examples of the following permits and licences: Explosive Transportation Licence, Atmospheric Emission Licence, Environmental Authorisation, First aid

or monitoring required for each permit or licence. Some EAs, permits and licence conditions provide accurate indications in terms of which assurance reporting the SCO has to provide, while others may not.⁵⁵⁹ In mitigating possible non-compliant actions SCO applies the requirements of clause 5.3 in ISO 14001:2015 and ISO 45001:2018 by unpacking the relevant roles and responsibilities for various managers in the organisation. With the support of the SHE GARR team within the organisation to evaluate and provide assurance to its adopted management systems as well as with management leadership and commitment to compliance the intended outcomes of the EMS and OHSMS are achieved. In so doing the SCO can confirm legal compliance to permit and licence conditions as well as to other requirements.⁵⁶⁰

Nel, Du Plessis and Du Plessis⁵⁶¹ contend that a dedicated EA matrix together with an authorisation management plan in the legal register will be "[t]he instrument of choice to manage sustained validity and to maintain compliance to conditions". The risk-based approach to legal compliance in the SCO requires that non-compliance with permit and licence conditions be reported to the relevant government authority while immediate risk mitigation strategies are put in place to address any possible legal risks, as illustrated in Figure 5.4.1. The permit and licence management system that is governed on the company's IMS as discussed in the next paragraph provides integrated compliance reports on the status of all the conditions of each authorisation.

exemption, Import/Export Licence: Non-Proliferation Licence, Lifting Machine Entity Approval, Owner Pharmacy Registration Certificate, Permit to Apply for a Certification Mark, Pharmacy Licence, QCTO Accreditation of SCO Trade Test Centre, Radioactive Source Registration Certificate, Railway Safety Permit, Registration: Fire Brigade Service, Letter of Authority for the SCO Shooting Range, Approval as Major Hazardous Installation, Certificate of registration: Fertiliser, Declaration as Key Point, and Group III Licence for X-Ray Room. These permits and licences provide the regulatory framework for SCO as well as indicate which regulatory agencies are applicable to its business operations.

⁵⁵⁹ My experience is that some of the conditions in the EAs, AELs and other permits/licences are ambiguous, not clear and in some cases contradictory.

⁵⁶⁰ Own experience in the petrochemical sector.

⁵⁶¹ Nel, du Plessis and Du Plessis "Instrumentation for local environmental governance" 108. The authors assert that a dedicated EA matrix together with an authorisation management plan in the legal register will be "[t]he instrument of choice to manage sustained validity and to maintain compliance to conditions".

5.4.2 Management Standards in the SCO

SHE governance in the SCO, as illustrated in Figure 5.4.1, is supported by different management standards⁵⁶² in one integrated system, referred to as its IMS. This section considers each of these management standards with reference to Responsible Care,[®] ISO 9001:2015, ISO 14001:2015 and OHSAS 18001:2007.⁵⁶³ The integration of command and control permit and licence conditions into a self-regulatory management system constitutes hybrid environmental governance for the SCO, as discussed in Chapter 2.

Responsible Care[®]

Responsible Care^{®564} as a form of pure self-regulation⁵⁶⁵ was developed for the chemical industry by the chemical industry⁵⁶⁶ and comprises seven management practice standards which are applied in the SCO. The management practice standards are related to (a) management commitment, (b) health and safety, (c) storage, distribution and transport, (d) pollution prevention and resource efficiency, (e) product stewardship, (f) community interaction, and (d) emergency response.

(a) Management commitment

The SCO observes that compliance with applicable SHE legislation will always be mandatory. The OME appreciates that one of its core risks is SHE legal compliance with statutory obligations. The SCO management is therefore committed not only to identifying the legislation which it is obliged to comply with but also monitoring the levels of SHE legal compliance in the organisation and implementing change where necessary. The SCO Exco is committed to managing and maintaining a legal compliance culture which is demonstrated by having quarterly management reviews, SHE Exco meetings, and senior management meetings as standard items on the SCO

⁵⁶² The compliance management system used in the SCO is based on the principles of good governance, proportionality, transparency and sustainability required by ISO 19600:2014 *Compliance management systems-guidelines*.

⁵⁶³ Refer to paragraph 2.3.5 in Chapter 2 for a summary of these instruments.

⁵⁶⁴ The SCO is certified in terms of the Responsible Care[®] management standard.

⁵⁶⁵ Refer to paragraph 2.3.5 in Chapter 2 for a discussion.

⁵⁶⁶ Delmas and Montiel 2008 *Policy Studies Journal* 67.

business calendar. This commitment extends throughout the SCO and includes contractors, as well as fixed-term and permanent employees.

(b) Health and safety

Commitment to this management practice standard enables the SCO to conduct its operations in such a way as to protect and promote the health and safety of employees, visitors, service providers and the public.⁵⁶⁷ The SCO provides assurance of this commitment to these stakeholders through its IMS aligned with the duty of care principle. Employees are also allowed to provide input into these management systems. Open communication with the relevant service providers, visitors, the public and government stakeholders concerning safety measures undertaken by the company to protect its employees with regard to their health and safety as well as the environment is always undertaken on big, visible digital screen and billboards along all the entry points and access roads in the SCO.

(c) Storage, distribution and transport

The SCO stores, distributes and transports products regularly and will always seek to conduct these activities in a way that will minimise the probability and potentially severe impacts they may have on the public and the environment. Regular monitoring and continual improvement of the company's business strategies with regard to the storage, distribution and transport of its products ensure that the requirements of this management standard are achieved.

(d) Pollution prevention and resource efficiency

The objective of this management standard is cleaner production and less waste through using the best available technologies together with efficient and effective allocation of the required resources. The SCO is dedicated to cleaner production and the minimisation of waste at all its production plants by reducing contaminants and pollutants as a priority at its plants. The protection of both the public and the environment is also vital in the SCO's operations which are characterised by

⁵⁶⁷ Required in terms of sections 8 and 9 of the OHSA.

accountable pollution prevention and resource efficiency strategies within the conditions of its various EAs.

Pollution prevention and resource efficiency during manufacturing and supply of the products of the SCO are paramount to responsible operations at the company. Sampson and Mkhize,⁵⁶⁸ for example, assert that “[t]he generators of waste have a duty of care⁵⁶⁹ to handle, store, transport and/or dispose of waste in an environmentally sound and legally compliant manner”. Also, in terms of section 16 of the NEM:WA holder of waste must have a general duty in respect of waste management.

(e) Product stewardship

The aim of product stewardship in the SCO is to take reasonable care of the products manufactured by the respective plants during each phase of such a product’s life cycle. This duty of care in the full-circle responsibility of waste management is referred to as the SCO’s “life-cycle responsibility” or “cradle-to-grave” responsibility.⁵⁷⁰ In terms of this responsibility, the SCO is committed to ensuring the safe and responsible use of chemicals at each phase of its production line, while its products are issued with due care to comprehensive safety data sheets (SDS) to mitigate and/or eliminate any possible risk to consumers of users of the products.

(f) Community interaction

The community within which the SCO facilities operate is an important stakeholder in its social licence to operate. Regular interaction with the community ensures that the SCO remains focused on operating responsibly in maintaining the company’s presence as a corporate citizen within the surrounding area. The sharing of information to all interested and affected parties within the host community promotes acceptance and trust while the SCO's Corporate Affairs department ensures that open communication

⁵⁶⁸ Sampson and Mkhize 2018 <http://www.wylie.co.za/articles/health-care-risk-waste-management-liability/>.

⁵⁶⁹ See section 28 of the NEMA.

⁵⁷⁰ See Sampson and Mkhize 2018 <http://www.wylie.co.za/articles/health-care-risk-waste-management-liability/>.

channels are maintained for the sharing of relevant and useful environmental governance-related information. Full and informed consent could be required from the SCO in certain circumstances for certain business activities or the introduction of new product streams in the ever-evolving chemical industry prior to applying for a new permit or licence or before amending the existing authorisations.⁵⁷¹

(g) Emergency response

The SCO has a fully operational emergency management service that provides 24/7 fire and rescue services while on-site hospital facilities treat most of the occupational emergencies associated with its operations. The emergency response services are available to the host community, cooperating with the local and district municipality in support of any major hazardous incident where lives or the environment is at risk. Each plant within the SCO has an emergency response plan which functions primarily from a risk-based approach to plant operations for the protection of plant employees.

The SCO's overall emergency response plan is aligned with that of the local municipality and is frequently updated in order for both the public and the SCO emergency services to respond promptly and effectively. The Sasol Secunda Operations has been declared as a major hazardous installation (MHI) in terms of regulation 5 of the *Major Hazardous Installation Regulations*.⁵⁷² In terms of this status, the SCO is obliged to communicate its updated emergency response plan frequently with the Govan Mbeki Municipality (GMM) to ensure alignment with the GMM's overall emergency response plan for Secunda and the surrounding towns.

⁵⁷¹ The notion of "prior and informed consent" was discussed in *Malibu and Others v Itereleng Bakgatla Mineral Resources Pty Ltd and Another* [2018] ZACC 41. The court held that the rights of traditional communities have to be protected by ensuring that such communities have a right to decide what should happen to the land where they have an interest. Traditional communities are offered legal protection by the *Interim Protection of Informal Land Rights Act* 31 of 1996 (IPILRA) to assume control over and deal with their land according to customary law and usages practised by them. Most significantly is that the IPILRA provides that no person may be deprived of any informal right to land without their consent. Also, see Masina 2018 <https://www.cliffedekkerhofmeyr.com/en/news/publications/2018/Corporate/mining-and-minerals-alert-23-november-Community-Consent-vs-Consultation-High-Court-rules-in-favour-of-community.html>.

⁵⁷² GN R692 in GG 22506 of 30 July 2001.

Responsible Care® in the SCO is based on the founding principles of “doing the right thing”, “being open and responsive to the environmental concerns of the public” by taking responsibility to mitigate its operational impact on the environment and take care of its “products from cradle to grave to cradle”.⁵⁷³ In achieving these principles, a selection of management standards in its hybrid environmental governance model has been implemented. One of these management standards is ISO 9001:2015 as discussed in the next paragraph.

ISO 9001:2015

The SCO is certified in terms of ISO 9001:2015. In reference to the discussion in Chapter 2, ISO 9001 represents the QMS of a particular company. The SCO manufactures different products, as discussed in paragraph 4.3 above, and the QMS enables the OME to assess its ability to satisfy customer needs and address regulatory requirements. ISO 9001:2015 supports and enables the SCO to lower operating costs for each of the plants manufacturing its above-mentioned products. The improvement of product quality from these plants ultimately results in increased levels of customer satisfaction towards profitability.

The standard allows the SCO to apply a risk-based approach and manage production challenges proactively while business risks are mitigated in terms of the Plan-Do-Check-Act methodology that underpins ISO 9001:2015.⁵⁷⁴ Document management is central to the operations standard which informs the SCO’s document governance strategy throughout the organisation. Moreover, the flexibility of ISO 9001:2015 at the same time offers the SCO an opportunity to align its business and operational strategy with the overall market strategy and vision of the parent company, Sasol SA Ltd in South Africa and abroad. The PDCA methodology of ISO 9001:2015 is similar to that of ISO 14001:2015⁵⁷⁵ which is discussed next.

⁵⁷³ Refer to Chapter 2 for a discussion.

⁵⁷⁴ Du Plessis and Nel “Driving compliance” 260-262. Also, refer to paragraph 2.4 in Chapter 2.

⁵⁷⁵ See Du Plessis and Nel “Driving compliance” 260-262 as well as Gunningham and Grabosky *Smart regulation* 174 as discussed in paragraph 2.4 in Chapter 2.

ISO 14001:2015

The purpose of ISO 14001:2015⁵⁷⁶ in the SCO is to provide guidelines for an EMS to effectively manage legal compliance with all the conditions contained in its permits and licences.⁵⁷⁷ Certification is an outcome of an independent third-party certification body audit of the EMS. It should be noted that such external legal audits are deemed to be not sufficient for certification alone as the ongoing knowledge of senior management of the SCO on the compliance status of the company is required. The SCO also relies on continuous monitoring, measuring and reporting that is in line with the environmental legal indicators (ELIs) by its senior management enhancement of effective environmental performance as guided by ISO 14031:2013.⁵⁷⁸ Likewise, fulfilment of legal compliance⁵⁷⁹ at the SCO is part of ISO 14001:2015 certification and that is a significant departure from the ISO 14001:2004 standard.

The formal implementation of ISO 14001:2015 seeks to establish an environmental policy suitable to the SCO's operations which includes a commitment to pollution prevention. Also, ISO 14001:2015 is empowering the SCO to⁵⁸⁰

- (a) simplify production planning, controlling, and monitoring of its activities to ensure compliance with its SHE policy;⁵⁸¹
- (b) identify the legal and other requirements with regard to environmental aspects of the SCO's production activities to control and mitigate impacts, consequences, precedencies, and business objectives proactively;⁵⁸²
- (c) establish relevant and appropriate programmes to implement its policies and objectives in a well-ordered manner by evaluating and achieving production

⁵⁷⁶ The SCO is certified in terms of ISO 14001:2015. See <http://www.european-accreditation.org/publication/ea-7-04-m-rev03-may-2017-2>.

⁵⁷⁷ Permit and licences in the SCO are included in its SHE authority matrix as discussed above.

⁵⁷⁸ See ISO 14031:2013 *Environmental management*.

⁵⁷⁹ is an intended outcome of ISO 14001:2015. Ongoing knowledge of the senior management of the SCO on the compliance status of the OME is required to provide a status report of the entity's legal compliance status. See <http://www.european-accreditation.org/publication/ea-7-04-m-rev03-may-2017-2>. Also, refer to paragraph 2.4.3 in Chapter 2 for a discussion.

⁵⁸⁰ See Hillary 2004 *Journal of Cleaner Production* 563.

⁵⁸¹ The SHE Policy is a requirement in terms of section 7 of the OHSA.

⁵⁸² This standard aligns with clause 6.1.3 of ISO 45001:2018 and ISO 14001:2015.

targets and maintaining increased performance levels while seeking continual improvement opportunities;

- (d) propagate management and employee commitment to legal compliance for the protection of the environment in terms of clear roles and responsibilities highlighting SHE accountability and responsibility;
- (e) inspire environmental planning throughout the full range of the business activities of the SCO in each stage of the product life cycle, that is from raw materials, inbound logistics, storage of raw products, and manufacturing to product distribution;
- (f) provide the required resources, including competency training, to realise sustainable set production performance levels;
- (g) establish an SHE governance process regarding the appraisal and auditing of its EMS for opportunities of system improvement and subsequent environmental performance;⁵⁸³
- (h) establish and maintain appropriate open communication channels with relevant internal and external stakeholders; and
- (i) encourage its service providers, contractors and suppliers to establish their own EMS.⁵⁸⁴

The EMS⁵⁸⁵ is an effective tool for permit and licence management within the company. All the permits and licences listed in the SHE authority matrix have different conditions attached to them and the company has to ensure legal compliance with regard to these conditions. In a study conducted by Swanepoel⁵⁸⁶ in 2011, the researcher sought to assess whether all conditions specified in the permits and licences issued for every new plant or operation in Solvents, a manufacturing plant in the SCO, had been successfully implemented and/or integrated into ISO

⁵⁸³ See paragraph 4.5 below.

⁵⁸⁴ See Hillary 2004 *Journal of Cleaner Production* 563.

⁵⁸⁵ See paragraph 2.4 in Chapter 2.

⁵⁸⁶ Swanepoel *The assessment of the implementation of the requirements as prescribed in the record of decision/authorisation into Sasol Solvents*.

14001:2004.⁵⁸⁷ Swanepoel⁵⁸⁸ concluded that such integration of licences and permits had indeed occurred, which confirmed the existence of hybrid self-regulation in the SCO.⁵⁸⁹ Swanepoel⁵⁹⁰ argues that an EMS “enable[s] organisations to identify, assess and manage environmental impacts throughout a development's lifecycle, improving overall environmental performance”.

Similarly, a pilot study by Brent and Premraj⁵⁹¹ confirmed that the adoption of a formal EMS in an organisation did indeed result in improved environmental performance in that manufacturing plants were clean, more environmentally responsible, and more efficient. Swanepoel⁵⁹² confirms that the “ISO 14001 EMS is ideally suited to be used as a management tool to ensure that the licence and permit requirements are implemented and complied with” while the flexibility of the voluntary management system allows the development of an EMS which fits the unique business needs of the SCO. This assertion also confirms hybrid environmental governance within the SCO.

All EMPs attached to each authorisation, permit and licence issued to the SCO are indeed integrated into its EMS to assess and manage its legal compliance status. Where ISO 14001:2015 focuses on environmental governance, OHSAS 18001:2007 of the SCO seeks to ensure occupational health and safety compliance in its SHE governance strategy. The next section focuses on OHSAS 18001:2007.

⁵⁸⁷ At the time of the study conducted by Swanepoel the company was certified in terms of ISO 14001:2004.

⁵⁸⁸ Swanepoel *The assessment of the implementation of the requirements as prescribed in the record of decision/authorisation into Sasol Solvents*.

⁵⁸⁹ Jay *et al* 2007 *Environmental Impact Assessment Review* 290. In support of Swanepoel the assertion of Jay *et al* that an EIA is an anticipatory and participatory environmental management tool with its “specific regulatory aim of ensuring that environmental considerations are taken into account in decision-making” upon which a licence or permit is issued by a competent authority.

⁵⁹⁰ Swanepoel *The assessment of the implementation of the requirements as prescribed in the Record of Decision/Authorisation into Sasol Solvents* 139.

⁵⁹¹ Brent and Premraj 2007 *South African Journal of Industrial Engineering* 21-34.

⁵⁹² Swanepoel *The assessment of the implementation of the requirements as prescribed in the record of decision/authorisation into Sasol Solvents* 157.

OHSAS 18001:2007

The SCO has been certified in terms of OHSAS 18001:2007⁵⁹³ by the Delhi Quality Services South Africa (DQS).⁵⁹⁴ In accordance with the provision of section 8 of the OHS Act, the SCO “shall provide and maintain, as far as reasonably practicable, a working environment that is safe and without risk to the health and safety of its employees”. OHSAS 18001:2007 provides a framework for the SCO to manage its occupational safety and health risks holistically through a simple PDCA management system. The SCO has until March 2021 to migrate from OHSAS 18001:2007 to the new standard ISO 45001:2018. The SCO was in the process of transitioning to the new standard at the time of the study. All these different management standards applied in the SCO have been incorporated into one single IMS which will be discussed next.

The SCO Integrated Management System

Wolfaardt⁵⁹⁵ investigated the commonalities between ISO 9001, ISO 14001, OHSAS 18001 and the Process Safety Management System within the SCO Solvents and found that these different management standards could be integrated into one IMS. The Sasol SCO IMS includes ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007 and Responsible Care® as well as its product stewardship management programme.⁵⁹⁶ The SCO named its IMS an SHEQ system⁵⁹⁷ which is a reference to safety,⁵⁹⁸ health,⁵⁹⁹ environment⁶⁰⁰ and quality.⁶⁰¹ However, at the time of the study reference was made only to the SHE IMS system though the same management standards are included.

⁵⁹³ OHSAS 18001:2007 has been replaced by ISO 45001:2018. At the time of the study, the SCO was migrating to ISO 45001:2018.

⁵⁹⁴ According to DQS South Africa website, the company is an independent and competent management partner for companies of every size and all business sectors. The company offers objective assessments according to recognized norms and technical or industry-specific standards. The company, as a part of the worldwide DQS Group, is located in Gauteng, South Africa and handles all certification services concerning aspects of consumer safety. See <https://www.dqs.co.za/>.

⁵⁹⁵ Wolfaardt *Integration of the SASOL Solvents, Secunda SHEQ management system with corporate process safety management*.

⁵⁹⁶ These management systems are audited by DQS for certification in terms of ISO 19011:2018 and ISO 17021:2016.

⁵⁹⁷ See Wolfaardt *Integration of the SASOL Solvents, Secunda SHEQ management system with corporate process safety management*.

⁵⁹⁸ Includes OHSAS 18001:2007.

⁵⁹⁹ Includes OHSAS 18001:2007.

⁶⁰⁰ Includes ISO 14001:2015.

⁶⁰¹ Includes ISO 9001:2015.

According to Jackson⁶⁰² an effective IMS should not merely be a collection of these different standards, but also a planned and well-defined system where all of the standards work in conjunction with each other. The policies of a company also set the framework for the whole system. Research conducted in the chemical industry indicates that the integration of Responsible Care[®], ISO 14001, ISO 9001 in one IMS “complete[s] rather than compete[s] with each other”.⁶⁰³ The chemical industry could not allow these standards to operate in isolation.⁶⁰⁴

The SCO implemented Responsible Care[®] and ISO 14001 as its EMS into a single IMS to ensure compliance with licence and permit conditions as part of its overall SHEQ management system as highlighted by Wolfaardt⁶⁰⁵ and Swanepoel.⁶⁰⁶ There is agreement in the literature that this approach as indicated by the authors⁶⁰⁷ could be seen as “full integration”, meaning that all standards are combined into one common management standard.⁶⁰⁸ Also, Wolfaardt argues that the certification of an organisation to various management standards improves an “organisation's demonstration of legal and regulatory compliance”.⁶⁰⁹ The constituting of a single IMS from various standards, like the SHEQ⁶¹⁰ management system in the SCO, as referred to by Wolfaardt,⁶¹¹ results in complete integration of a single multi-purpose IMS to drive legal compliance effectively.⁶¹²

⁶⁰² Jackson *The ISO 14001 implementation Guide* 4.

⁶⁰³ Delmas and Montiel 2008 *Policy Studies Journal* 65-93.

⁶⁰⁴ Simon *et al* 2013 *Total Quality Management & Business Excellence* 294-309.

⁶⁰⁵ Wolfaardt *Integration of the SASOL Solvents, Secunda SHEQ management system with corporate process safety management* 27.

⁶⁰⁶ Swanepoel *The assessment of the implementation of the requirements as prescribed in the record of decision/authorisation into Sasol Solvents* 139.

⁶⁰⁷ Wolfaardt *Integration of the SASOL Solvents, Secunda SHEQ management system with corporate process safety management* 27.

⁶⁰⁸ Simon *et al* 2013 *Total Quality Management & Business Excellence* 295; Bernardo *et al* 2009 *Journal of Cleaner Production* 742-750.

⁶⁰⁹ Wolfaardt *Integration of the SASOL Solvents, Secunda SHEQ management system with corporate process safety management* 25.

⁶¹⁰ At the time of the Wolfaardt's study the SCO referred to the SHE IMS as SHEQ IMS, meaning safety, health, environment and quality. When the current study was conducted the system was known as SHE IMS.

⁶¹¹ Wolfaardt *Integration of the SASOL Solvents, Secunda SHEQ management system with corporate process safety management*.

⁶¹² Karapetrovic and Willbom 1998 *The TQM Magazine* 204-213.

The SCO SHE governance and the management thereof is driven through the SHE IMS system. The entity ensures that the execution of its SHE delivery strategy within a PDCA methodology is supported by the different integrated standards. Legal compliance in the SCO as an outcome of its SHE governance and assurance framework is activated by the SHE legal landscape.⁶¹³ The inclusion of legal requirements in this landscape and the obligation of the SCO to provide assurance offers the opportunity for the business to join the state in a hybrid environmental governance⁶¹⁴ arrangement through a public–private partnership with the application of "new" governance tools using an IMS to ensure and demonstrate compliance.⁶¹⁵ Some of the regulatory requirements within the SCO's SHE legal landscape call for co-management opportunities with community stakeholders in its quest for compliance.

The SCO is no longer the single actor in its SHE governance framework as is the state in its pursuance of environmental protection through command and control. Pure self-regulation as discussed in Chapter 2 in the SCO context is not a viable option because the company's approach to legal compliance is driven by co-management or mandated self-regulation in a public-private partnership relationship with interested and affected actors as illustrated in Figure 5.4.1 above. Risk-based compliance with legal and other requirements transpires through the integration of management standards with permit and licence conditions in an IMS. Integrated SHE reporting, governance, monitoring and auditing in terms of the One Sasol SHE Excellence model underscores this approach. SHE governance in the SCO from the SHE legal landscape culminates in SHE legal audits to provide assurance through legal compliance, which is discussed in the next section.

The company's SHE governance strategy is also influenced by interest and pressure from different community stakeholders as illustrated by Misiūnė and discussed in Chapter 2. As in the illustration in Figure 2.3.1 (paragraph 2.3.2), the SCO's operations are also affected by factors relevant to the external, macro- and internal environment that has to be managed collaboratively to balance competing interests of all

⁶¹³ Refer to paragraph 4.4.1.

⁶¹⁴ See paragraph 2.4 in Chapter 2.

⁶¹⁵ Refer to paragraph 2.4 in Chapter 2.

stakeholders.⁶¹⁶ Likewise, clause 4.1 of ISO 14001:2015 and ISO 45001:2018 provides that the SCO should have an understanding of its organisational context within the fence line communities where it conducts its activities.

SHE legal compliance within the company is very much an outcome of an effective and efficient collaboration with community stakeholders and engagement with the government as illustrated in Figure 2.4.1 above that aligns with the theoretical framework described by Misiūnė in paragraph 2.3.2 in Chapter 2. Furthermore, SHE governance in the SCO from a self-regulatory perspective illustrates its complex interconnections between the different plants indicated in Figure 2.3.2. The conceptual framework for self-regulation illustrated by Ramanathan *et al* in Figure 2.3.2 (paragraph 2.3.2) highlights the complex nature of private self-regulation which ultimately results in organisational sustainability which is comparable with the self-regulatory approach at the SCO. The SHE governance strategy adopted in the SCO recognises the oversight role of the government as well as the influence of different community stakeholders with regard to its operations, and various co-management and public–private partnership arrangements as illustrated by Lemos and Agrawal (see Chapter 2).⁶¹⁷ These regulatory and social partners engage with the company as civil regulators on many matters in its SHE governance strategy as active participants in its quest to ensure environmental compliance in a sustainable manner.

5.5 Legal compliance audits in the SCO

Figure 5.4.1 also indicates that SHE legal audits are very much part of the governance strategy of the SCO. In line with the literature discussed in Chapter 2, the SCO undertakes compliance assessments through two types of audits, namely internal⁶¹⁸ and independent/external legal compliance audits, with a view to obtaining certification for its adopted self-regulatory management standards as discussed

⁶¹⁶ Stakeholder engagement and the management of all interlinked relations between various stakeholders are managed by the SCO's Corporate Affairs department.

⁶¹⁷ See paragraph 2.4.1 of Chapter 2.

⁶¹⁸ These internal audits are conducted by the auditors of Sasol SA Ltd.

above,⁶¹⁹ as well as compliance audits to verify the status of its legal compliance with authorisations, permit and licence conditions.⁶²⁰

The objective for certification audits in the SCO is to verify conformance to the requirements of the standards so as to obtain certification. The criteria to achieve this objectives include the following:

- (a) Evaluation of the performance of the management system over the period of certification;
- (b) Review of previous audit reports;
- (c) Review of the effectiveness of mitigating measures from the previous audit;
- (d) Assessment of the effectiveness of the company's management system with regard to all adopted standards;
- (e) Evaluation of demonstrated management commitment for the maintenance of efficiency and the improvement of the management system;
- (f) Appraisal of realisation of the entity's SHE policy and objective;
- (g) Requirements with regard to customer specifications; and
- (h) Assessment of the effectiveness of legal compliance.

Legal compliance audits⁶²¹ could vary in terms of the depth and complexity thereof or as per the internal audit programme required by clause 9.2 of ISO 14001:2015, ISO 9001:2015 and ISO 45001:2018 respectively. It is determined by the conditions contained in the authorisation, permit or licence. The *EIA Regulations*, 2014 as amended requires that legal audits are performed internally on an annual basis as well as externally on a two- or three-yearly cycle in terms of the relevant internal business process and procedures. AELs and water use licences (WULs) require legal compliance audits as prescribed by legislation to which the SCO has to adhere.⁶²² Root cause analysis performed in terms of audit reports⁶²³ results in corrective action plans and

⁶¹⁹ External audits are conducted by independent audit firms like DQS South Africa.

⁶²⁰ See Chapter 3 discussion.

⁶²¹ The auditing process may be guided by the principles of ISO 19011:2018 *Guidelines for auditing management systems* to ensure the integrity of the audit as well as the competence of the auditor.

⁶²² See paragraphs 2.4 and 3.4 in Chapters 2 and 3 for a discussion.

⁶²³ The audit results are also discussed at the annual management review meeting with the SCO Exco.

they are monitored through the corrective or preventive logbook procedure. Trending reports compiled from audit findings assist the SCO in preventing similar occurrences. This approach contributes to future continual improvement in its business and operations.

5.6 Conclusion

The case study in this chapter provided an overview of the petrochemical industry in South Africa with a focus on Sasol SA Ltd.⁶²⁴ The SCO, a division of Sasol SA Ltd, was used as a case study to illustrate regulated self-regulation within its SHE governance framework. SHE governance in the SCO highlights hybrid environmental governance, a combination of command and control and self-regulation to reach the objectives of environmental protection as envisioned in section 24 of the *Constitution*. This chapter focused on the implementation of SHE governance that is supported by a single SHE IMS where the application of self-regulatory voluntary and sector-based instruments⁶²⁵ offers a basis for hybrid environmental governance in contemplating assurance to permit and licence conditions of the SCO.

The case study provides a unique and practical way to illustrate that although Responsible Care® is perceived to be a pure self-regulation governance tool developed for the petrochemical industry, it is complemented by an SHE IMS. It is supported by different cooperating ISO standards to monitor legal compliance in the organisation.⁶²⁶ In addition, the integration of permits and licence conditions, such as the EMPr, AQAMP, WMP and the BDMP, with the management standards into the SHE IMS of the SCO indicates that command and control regulation on the one hand and self-regulation on the other could become a workable solution for hybrid environmental governance in achieving SHE legal compliance. This regulatory approach assists the petrochemical industry in governing its own behaviour towards environmental protection with government oversight. Notwithstanding the objectives of SHE governance in the SCO, as illustrated in Figure 5.4.1 above, in particular, where the petrochemical sector, in general, would have a voluntary organisation or sector-based

⁶²⁴ See paragraph 1.2 in Chapter 1.

⁶²⁵ Refer to section 23A of the NEMA as discussed in paragraph 4.3 of Chapter 4.

⁶²⁶ Pure self-regulation in the petrochemical industry is not feasible as discussed in paragraph 2.3.1 in Chapter 2.

instruments contemplated in section 23A of the NEMA, such regulatory tools would still be regarded as hybrid environmental governance.

This case study illustrates that hybrid environmental governance is possible through mandated self-regulation in combination with the outcomes of internal and external legal audits to provide regulatory assurance on a risk-based approach. Risk-based SHE governance and assurance in the SCO, as demonstrated in Figure 5.4.1 above, indicate how SHE governance in the SCO is activated through partnerships between different stakeholders to accomplish the objectives of environmental protection contemplating legal compliance. SHE governance in the OME occurs within a risk-based assurance framework emanating in a legal compliance programme, appropriate risk identification and assessment, risk monitoring, and risk mitigation.

Proactive SHE legal compliance is the intended objective of SHE governance within the SCO. This objective is triggered by the company's SHE legal landscape using other measures as governance tools⁶²⁷ through hybrid environmental governance. The use of various environmental management and governance instruments⁶²⁸ provides the regulatory mechanisms for the integration into the company's SHE governance and assurance framework.

The literature discussed in Chapter 2 indicates that the idea of hybrid environmental governance through hybrid arrangements underscores the self-regulated approach to environmental governance as indicated in the SCO's SHE governance and assurance framework.⁶²⁹ The versatility and flexibility of this framework that is a unique feature of self-regulation⁶³⁰ is emphasised with the migration of the SCO from OHSAS 18001:2007 to ISO 45001:2018 at the time of the study. The integration of permit and licence conditions into the ISO 14001 standard⁶³¹ and the commonalities between

⁶²⁷ Refer to the SHE legal alert, SHE legal forum, legal appointment framework, SHE authority matrix, management standards, the IMS as well as legal compliance audits as discussed.

⁶²⁸ See a summary of environmental governance tools in Table 2.4.1 of Chapter 2.

⁶²⁹ Refer to Figure 5.4.1.

⁶³⁰ Refer to paragraph 2.3 of Chapter 2.

⁶³¹ Swanepoel *The assessment of the implementation of the requirements as prescribed in the record of decision/authorisation into Sasol Solvents*.

existing management standards and the putting into practice of new standards⁶³² allow the SCO to adapt its self-regulatory governance strategy to suit business needs in a cost-effective manner with the least interference in operations and profitability. Mandated self-regulation with continuing government oversight in an enabled setting and sustained by interaction with different stakeholders through mutually beneficial partnerships could perform well in the petrochemical industry.⁶³³

⁶³² Wolfaardt *Integration of the SASOL Solvents, Secunda SHEQ management system with corporate process safety management*.

⁶³³ See paragraphs 2.4 and 3.4 in Chapters 2 and 3 respectively for a discussion.

Chapter 6

Conclusion and recommendations

The research question this study sought to answer was: How could self-regulation contribute to achieving environmental legal compliance from a governance perspective within the petrochemical company in South Africa? In pursuance of the research question, the aim of this study was to explore how self-regulation as an environmental governance tool to accomplish environmental legal compliance in the petrochemical industry in from the basis of governance. Three broad objectives to support the main aim has been identified.⁶³⁴ The aim of the study was approached from the premise that the petrochemical industry has a compliance obligation as per ISO 14001:2015 to reasonable legislative and other requirements contemplated by section 24 of the *Constitution*.⁶³⁵ In answering the research question this dissertation was divided into 5 chapters where Chapter 2, 3 and 4 covered the three broad objectives of the overall aim of the study.⁶³⁶ Chapter 5 presented a case study of the SCO where self-regulation through hybrid environmental governance for its operations was implemented.

6.1 Conclusions

The importance of self-regulation as an element of new environmental governance for the purposes of achieving compliance within the petrochemical sector in the legal framework provided by section 24 of the *Constitution* and section 23A of the NEMA was explored as stated in the aim of the study in Chapter 1. The three broad objectives⁶³⁷ identified in this study to support the aim as discussed in Chapters 2,3 and 4 will be concluded below:

6.1.1 Objective one: Self-regulation and hybrid environmental governance

The first objective was discussed in Chapter 2 and sought to clarify three sub-elements.⁶³⁸ Firstly, the concepts of what is meant by regulation, governance and

⁶³⁴ See paragraph 1.2 of Chapter 1.

⁶³⁵ Refer to paragraph 1.2 of Chapter 1.

⁶³⁶ Refer to paragraph 1.2 of Chapter 1.

⁶³⁷ See paragraph 1.2 in Chapter 1.

⁶³⁸ Paragraph 2.2 of Chapter 2.

environmental governance⁶³⁹ from the perspective of government regulation,⁶⁴⁰ government vis-à-vis governance⁶⁴¹ and environmental governance was clarified.⁶⁴² In exploring these concepts the discussion found that regulation and governance to be different, yet related. Government regulation seems to suggest a command and control regime with regard to environmental management that is normally associated with state power, while governance could denote taking a flexible and collaborative approach to environmental protection by including different surrogate regulators. Other actors, like NGOs, private firms, associations and society could engage in a public–private relationship to create environmental governance where resources and expertise could be shared through a distribution of state power in the context of environmental management.⁶⁴³ This self-regulatory regime has been broadly explored by many scholars as discussed in Chapter 2 as a measure to ensure environmental protection.

The study indicates that command and control regulation where the state governs the behaviour of the regulated community in a strict hierarchical structure appears to allow for an approach where the state is no longer regarded as the only or most important decision-maker in environmental management matters.⁶⁴⁴ Regulation and environmental governance presupposes two views to address environmental challenges, that is government regulation *vis-à-vis* environmental governance.⁶⁴⁵ There seems to be a shift from government regulation to environmental governance. Environmental governance takes a wider approach to include sustainable development and speaks to the principles in IEM.⁶⁴⁶

The case study of Sasol SA Ltd, as discussed in Chapter 5, indicates that environmental governance takes on a hybrid approach towards legal compliance. The SHE governance strategy of the SCO has self-regulation as its basis while engaging with

⁶³⁹ Paragraph 2.2 of Chapter 2.

⁶⁴⁰ Paragraph 2.2.1 of Chapter 2.

⁶⁴¹ Paragraph 2.2.2 of Chapter 2.

⁶⁴² As discussed in paragraph 2.2.3 in Chapter 2.

⁶⁴³ See paragraph 2.2 in Chapter 2.

⁶⁴⁴ See paragraph 2.2 in Chapter 2.

⁶⁴⁵ See paragraph 2.2.2 in Chapter 2.

⁶⁴⁶ See paragraph 2.2.3 in Chapter 2.

government and collaborating with community stakeholders to achieve legal compliance through various hybrid arrangements in terms of its many authorisations, permits, licences, EMPr, AQMPs, pollution prevention plans (PPPs), and WML, amongst others.⁶⁴⁷

Secondly, the concept of self-regulation⁶⁴⁸ with reference to its theoretical framework,⁶⁴⁹ drivers,⁶⁵⁰ limitations⁶⁵¹ and instruments.⁶⁵² Self-regulation suggests a regulatory regime where organisations regulate their own behaviour. The literature indicates that the concept of self-regulation is not easily defined; however, in the context of this study it was necessary to explore the concept. It was submitted that self-regulation is manifested in three different approaches of which two could be inferred to be a form of hybrid governance. The three different modes are (a) voluntary or total self-regulation, (b) mandatory partial self-regulation or (c) mandated self-regulation.⁶⁵³ Total self-regulation or “pure” self-regulation is indicated as not a viable option in the petrochemical industry while mandated self-regulation is suggested as a workable solution in a hybrid approach to environmental governance to obtain legal compliance.

A theoretical framework for self-regulation seems to suggest that institutional theory could be a foundational construct for the adoption of self-regulation in the petrochemical industry but does not entirely reveal the complex nature of environmental regulation.⁶⁵⁴ A comprehensive theoretical view is required to analyse the complexity of environmental regulation which could include, amongst others, (a) information theory, (b) stakeholder theory and (c) social network theory.⁶⁵⁵ The complexity of environmental self-regulation is further enhanced by its adoption in a multifaceted petrochemical entity like Sasol SA Ltd.⁶⁵⁶ The theoretical framework

⁶⁴⁷ Refer to paragraph 2.4 in Chapter 2 and 5.4 in Chapter 5.

⁶⁴⁸ Paragraph 2.3.1 of Chapter 2.

⁶⁴⁹ Paragraph 2.3.2 of Chapter 2.

⁶⁵⁰ Paragraph 2.3.3 of Chapter 2.

⁶⁵¹ Paragraph 2.3.4 of Chapter 2.

⁶⁵² Paragraph 2.3.5 of Chapter 2.

⁶⁵³ See paragraph 2.2.1 in Chapter 2.

⁶⁵⁴ See paragraph 2.3.1 in Chapter 2.

⁶⁵⁵ See paragraph 2.3.1 in Chapter 2.

⁶⁵⁶ Refer to paragraph 4.4 in Chapter 4.

submitted in this study provides strategic input in the legal compliance, governance and assurance framework of the SCO that underpins its SHE governance strategy.⁶⁵⁷

It was submitted that both command and control and self-regulation are hampered by limitations and could be inadequate to ensure legal compliance in complex organisations.⁶⁵⁸ There are also drivers towards self-regulation that cannot be ignored.⁶⁵⁹ It is suggested that these drivers motivated Sasol SA Ltd to introduce self-regulatory measures in a sustainable manner across its operations in South Africa. In terms of Sasol SA Ltd's One SHE Excellence approach, self-regulation was embraced to give effect to its quest for environmental protection to do away with the challenges of environmental protection represented by a command and control regime. Hybrid environmental governance through a voluntary organisation or sector-based instruments⁶⁶⁰ was embraced by the company as a workable solution.

The instruments for self-regulation adopted in Sasol SA Ltd are ISO 9001:2015, ISO 14001:2015 and Responsible Care®. OHSAS 18001:2007 is also one of the company's management standards focussing on occupational health and safety. However, at the time of the study the SCO was in the process of transitioning to the new ISO 45001:2018 that replaces ISO 18001.⁶⁶¹ Responsible Care® and in particular ISO 14001:2015 are the company's EMS which allows for the incorporation of authorisations in its IMS. Internal and external compliance audits furthermore assist organisations to verify the levels of its legal compliance with the conditions attached to these authorisations while maintaining the SCO's ISO-certification to its adopted management standards.

Thirdly, hybrid environmental governance,⁶⁶² focussing on forms⁶⁶³ and instruments⁶⁶⁴ that could contribute to hybrid environmental governance in the petrochemical industry was discussed. The study indicated that the purpose of hybrid environmental

⁶⁵⁷ Refer to paragraph 4.4 in Chapter 4.

⁶⁵⁸ See paragraphs 2.2.1 and 2.3.4 in Chapter 2.

⁶⁵⁹ See paragraph 2.3.3 in Chapter 2

⁶⁶⁰ As discussed in Chapter 2, 4 and 5.

⁶⁶¹ Paragraph 5.4.2 in Chapter 5.

⁶⁶² Paragraph 2.4 in Chapter 2.

⁶⁶³ Paragraph 2.4.1 in Chapter 2.

⁶⁶⁴ Paragraph 2.4.2 in Chapter 2.

governance is to achieve legal compliance in the industry through cooperative public–private partnerships between the state, society, NGOs and business.⁶⁶⁵ The statutory provisions of section 23A in the NEMA⁶⁶⁶ provided insight into the application of hybrid environmental governance as a complementary instrument to command and control regulation. It was submitted that hybrid environmental governance is a form of self-regulation with government oversight between different actors in order to achieve the objectives of environmental protection in a sustainable, decentralised and collaborative manner.⁶⁶⁷ The option of hybrid environmental governance in a rapidly changing petrochemical sector as an appropriate governance approach was argued from the perspective that the state is no longer the only decision-maker in environmental matters. The contribution of the petrochemical industry as a civil regulator should be considered.

It was also submitted that EAs, permits and licences that are issued to the industry by the relevant competent authority to conduct a listed activity in its product portfolio provide the ideal opportunity to include enforceable self-regulatory conditions in, for example, its EA, AEL or IWUL.⁶⁶⁸ Likewise, it was submitted that the associated EMP of such an organisation which has given rise to various mandatory PPPs could include options for collaborative environmental governance in different hybrid arrangements between stakeholders.⁶⁶⁹ Similarly, it was contended that the conditions attached to authorisations, permits and licences in an organisation should be incorporated into its EMS.⁶⁷⁰ It was argued that the EMS, for example in Sasol SA Ltd, could be integrated into a single IMS to provide for separate management systems, like QMS,⁶⁷¹ EMS,⁶⁷² OHSMS⁶⁷³ and Responsible Care[®]⁶⁷⁴ with demonstrable legal compliance as a possible outcome.

⁶⁶⁵ See paragraphs 2.4, 4.4 and 5.4 in Chapters 2, 4 and 5 respectively.

⁶⁶⁶ Refer to paragraph 4.3.2 of Chapter 4.

⁶⁶⁷ See paragraphs 2.4 in Chapter 2.

⁶⁶⁸ See the reference on CoAL in paragraph 2.3.1 of Chapter 2 as well as paragraphs 3.4 and 4.4 in Chapters 3 and 5.

⁶⁶⁹ Paragraphs 2.4, 4.4 and 5.4 in Chapters 2, 4 and 5 respectively.

⁶⁷⁰ Paragraph 5.4.2 in Chapter 5.

⁶⁷¹ Includes ISO 9001:2015 as discussed in paragraphs 2.3 and 5.4.2.

⁶⁷² Includes ISO 14001:2015 as discussed in paragraphs 2.3 and 5.4.2.

⁶⁷³ Include OHSAS 18001:2007 and ISO 45001:2018 as discussed in paragraphs 2.3 and 5.4.2

⁶⁷⁴ As discussed in paragraphs 2.3 and 5.4.2.

The study examined different hybrid environmental governance instruments included in the IMS of the SCO to demonstrate a synergy between implemented self-regulatory instruments and those commonly used by the state in command and control regulation.⁶⁷⁵ The interface between self-regulation and command and control in the governance strategy of the SCO provides insight into hybrid environmental governance within the petrochemical sector. In addition, the SCO implemented an IMS as the platform for its SHE governance strategy. Commitment from its Exco, management, a robust IMS, legal and enablement support, specialist personnel in its SHE GARR team, as well as the different elements that make up its governance and assurance framework, all work together to verify compliance with legal and other requirements contained in its legal landscape.⁶⁷⁶

6.1.2 Objective two: Environmental compliance through legal audits

Chapter 3⁶⁷⁷ focused on environmental legal compliance audits. The research question of the study includes elements that relate to governance, assurance and risk management. It was submitted that a suitable governance tool could be a compliance audit as a checking mechanism towards achieving environmental legal compliance in a risk-based methodology. It is argued in the study that legal compliance audits could be categorised as (a) those audits regarded as a command and control instrument and (b) compliance audits conducted by the industry itself.⁶⁷⁸ It was also submitted that compliance audits are prescribed in amongst others, the NEMA, the NEM:PAA, the NEM:ICMA, the *EIA Regulations*, 2014 as amended,⁶⁷⁹ the MPRDA⁶⁸⁰ and the NEM:WA.⁶⁸¹ The government could also request the industry to conduct an audit against the conditions of its EAs, permits and licences. Similarly, it was submitted that organisations could voluntarily conduct certification audits against their adopted

⁶⁷⁵ The typical command and control regulatory tools used by the State in environmental management are authorisations, permits and licences as listed in Table 2.4.1 in paragraph 2.4.2 in Chapter 2.

⁶⁷⁶ See paragraph 4.4.1 in Chapter 4.

⁶⁷⁷ Also see paragraphs 4.5 and 5.5 in Chapter 4 and 5 respectively.

⁶⁷⁸ Chapter 3 as well as paragraphs 4.5 and 5.5 in Chapter 4 and 5 respectively.

⁶⁷⁹ Regulation 34 of the *EIA Regulations*, 2014 as amended provides that environmental compliance audits have to be conducted against the conditions of all EAs issued to an organisation. EMPs must be included in the audit scope.

⁶⁸⁰ Section 10 of the MPRDA refers to a performance assessment in respect of an audit.

⁶⁸¹ See *Norms and Standards for the Storage of Waste* GN R926 in GG 37088 of 29 November 2013. The Norms and Standards provide for the frequency of auditing, the content as well as the submission of the audit reports to the regulator.

management standards to measure their level of legal compliance.⁶⁸² Organisations can determine the effectiveness of self-regulation via internal audits, monitoring and measuring, inspections and management reviews.⁶⁸³

It is further reasoned in the study that the level of legal compliance in the SCO from a governance perspective could be assessed through voluntary and mandatory legal compliance audits.⁶⁸⁴ Legal compliance audits as per the two categories identified in this study are one of the hybrid environmental governance tools in the environmental governance strategy of the SCO.⁶⁸⁵ In order to uphold its certifications for its adopted management standards, which is the core component of its self-regulatory regime, external certifications audits are compulsory for all the operations of Sasol SA Ltd of which the SCO is a division. Also, the SCO as a holder of various EAs is required to conduct independent external third-party environmental legal compliance audits to verify fulfilment to its EMPs and all conditions included in its EAs as required by regulation 34 of the *EIA Regulations*, 2014 as amended. Amendments to the EAs and EMPs of the SCO are also only considered and requests thereto submitted to the relevant competent authority on the basis of an external legal compliance audit in terms of regulation 35 of the *EIA Regulations*, 2014 as amended.⁶⁸⁶

6.1.3 Objective three: A legal framework for self-regulation

The focus of Chapter 4 addressed objective three of the main aim to provide insight into the South African legal framework for self-regulation.⁶⁸⁷ It is submitted in the study that environmental legal compliance could be achieved through reasonable legislative and other measures contemplated in section 24(b) of the *Constitution*. Self-regulation was arguably one of the approaches to environmental management contained in the *Green Paper*.⁶⁸⁸ However, the idea did not materialise in the *White Paper* and was also omitted in the initial NEMA to provide for integrated and sustainable development. The inclusion of “other measures” in section 24(b) of the

⁶⁸² Chapter 3.

⁶⁸³ Own experience in the petrochemical industry.

⁶⁸⁴ As discussed in Chapter 3. Also, see paragraphs 4.5 and 5.5.

⁶⁸⁵ Paragraph 5.5 of Chapter 5.

⁶⁸⁶ Paragraph 5.5 of Chapter 5.

⁶⁸⁷ See Chapter 4.

⁶⁸⁸ As discussed in paragraph 4.3 of Chapter 4.

Constitution provided a starting point to reflect on a wider philosophy and practice of self-regulation *in lieu* of an ordinary legal compliance approach to environmental protection as was argued in *Grootboom*. It was observed that compliance is not likely to be achieved by legislative measures alone.⁶⁸⁹

It was contended in the study that other measures are to be considered which would perpetually support legislative measures to achieve the objective of section 24 of the *Constitution*. It is submitted that the amendment of the NEMA to include section 23A was specifically to provide for such other measures. The publication by the Minister of Environmental Affairs⁶⁹⁰ was also observed at the time of the study of what could arguably be referred to as 'other measures' in terms of section 24(2)(c) of the NEMA to provide guidance on the procedure the industry must follow for the adoption of spatial tools or environmental management instruments.⁶⁹¹

The environmental governance strategy of the SCO is activated by a legal landscape unique to the business activities of the entity. In terms of the requirements of clause 6.1.3 of ISO 45001:2018 and ISO 14001:2015, the legal registers of each of the nine business units in the SCO a determination was done of legal requirements and other requirements⁶⁹² applicable to the business. These requirements are frequently updated. Also, in terms of multiple clauses in ISO 14001:2015, the management of the SCO made a commitment to manage and ensure legal compliance with its applicable legal and other requirements.⁶⁹³ The adoption of Responsible Care® as a voluntary sector-based self-regulatory instrument in Sasol SA Ltd contemplated by section 23A(1)(a) of the NEMA is a testimony to the commitment of the entity to ensure sustainable legal compliance.⁶⁹⁴

⁶⁸⁹ Idem 4.2 of this study.

⁶⁹⁰ Now called the Minister of Environment, Forestry and Fisheries.

⁶⁹¹ Idem 3.3.2 of this study.

⁶⁹² The other requirements in SCO includes as a minimum: EAs, RODs, permits, licences, exemptions, certifications, registrations, agreements with the local government, and directives.

⁶⁹³ Paragraphs 2.4., 4.4 and 5.4 in Chapters 2, 3 and 4 respectively.

⁶⁹⁴ Idem 4.3.2 of this study.

6.1.4 Case study: Self-regulation in the petrochemical industry

The case study in this research to give effect to the overall aim and the three broad objectives was focused on the SCO, a division of Sasol SA Ltd.⁶⁹⁵ It was illustrated that hybrid environmental governance was practised in the SCO in its SHE legal governance and assurance framework.⁶⁹⁶ Chapter 4 provides examples of self-regulatory or sector-based instruments implemented within the SCO to satisfy the provisions of sections 23A(1)-(3) of the NEMA. These instruments assist the SCO in reaching the objective of environmental protection from a self-regulatory perspective in collaboration with state-led command and control regulation.

The study indicates that environmental governance at the SCO recognised the significance of the influences from different actors in its public–private partnerships from a co-regulatory perspective in achieving SHE legal compliance. The objectives of environmental protection were achieved with the application of the appropriate management systems. The integration of command and control instruments into these management systems by continuous collaboration with the local community and engagement with the regulators ensures a meaningful and purpose-driven approach in the SCO that has yielded the intended compliance outcomes to legal and other requirements.⁶⁹⁷ Furthermore, it was shown that the SCO continues to uphold its ISO certification for its implemented standards through internal and external compliance audits. The study further indicates that the Sasol One SHE Excellence approach warranted consistency with regard to legal compliance from a governance perspective throughout its operations in South Africa. This practice could possibly be generalised or transferred to other petrochemical industries in South Africa.

6.2 Recommendations

This section will focus on the identification of any gaps with regard to self-regulation within the petrochemical industry and make recommendations for Sasol SA Ltd⁶⁹⁸ as well as legal recommendations for the petrochemical industry in South Africa in

⁶⁹⁵ See Chapter 5.

⁶⁹⁶ As discussed in Chapter 5. See Figure 5.4.1 in paragraph 5.4 of Chapter 5.

⁶⁹⁷ Required by ISO 14001:2015 and ISO 45001:2018.

⁶⁹⁸ See paragraph 6.2.1.

general.⁶⁹⁹ This study provides for distinctive significance, perspectives and relevance to the petrochemical industry, academia (legal) and the regulator. The existing published research suggests that environmental regulation could take the approach of either inflexible command and control from the government regulation or flexible self-regulation by civil regulators.⁷⁰⁰ There is no fixed definition of self-regulation and it can be observed on a spectrum ranging from a detailed government command and control regulation to pure self-regulation.⁷⁰¹ Similarly, the definition of environmental governance implies self-regulation and hybrid governance but does not specifically provide for these regulatory approaches. It is my recommendation that the definition of environmental governance be amended to specifically include self-governance in the light of hybrid environmental governance contemplated in section 23A of the NEMA.

The literature, however, seems to point towards a regulatory band with pure self-regulation on the one end and command and control on the other. Hybrid environmental governance as indicated seeks to find itself in different points on this spectrum between the two regimes. The uncertainty to pinpoint hybrid environmental governance as an exact science also occurs in legislation where the concept is neither defined nor specifically referred to except for the inference that could be drawn from sections 23A of the NEMA and to give effect to the provisions of section 24(b) of the *Constitution*.

Nevertheless, the SCO, a division of Sasol SA Ltd has implemented the idea of self-regulation and the implementation of hybrid environmental governance has been embraced in the organisation. While the concept is not yet completely clear from a legislative perspective and the petrochemical sector is not sure how and whether self-regulation occurs in other industries since Responsible Care[®] was developed for the chemical industry by the chemical industry, it could be submitted that environmental legal compliance is possible through hybrid governance. The recommendations can be

⁶⁹⁹ See paragraph 6.2.2.

⁷⁰⁰ Paragraph 2.3.1 of Chapter 2.

⁷⁰¹ Gunningham and Rees 1997 *Law and Policy* 363-414.

divided into Sasol SA Ltd specific recommendations and legal recommendations as discussed below.

6.2.1 Sasol SA Ltd recommendations

Based on the current study, it is recommended that for self-regulation through hybrid environmental governance to improve within Sasol SA Ltd in its contribution to achieving legal compliance at its operations it:

- May accept that achieving compliance can be challenging, expensive and requires competent staff:

In the context of Sasol SA Ltd, the SHE GARR teams responsible for legal compliance consist of highly qualified and a competent cohort of specialists in various fields of compliance and regulatory governance as well as legal support. The development of effective compliance and a governance culture within any industry takes years and a concerted effort of continual improvement to arrive at a point where the uptake for compliance is institutionalised. Sasol SA Ltd implemented its One SHE Excellence approach to enable the organisation to manage its SHE risks effectively to ensure sustainable business performance results while retaining its licence to operate. As a global company with a significant footprint, Sasol SA Ltd's approach to proactive compliance following a risk-based approach is best achieved with its SHE governance strategy applying hybrid governance instruments.

Self-regulation in the industry is a specialised undertaking and it is recommended that an organisation shall understand its regulatory context to receive the maximum benefit from its self-regulatory undertakings. It is recommended that the company calls for appropriate competent and skilled employees who should be able to comprehend the difficulty and complexity of applying its own rules and standards in collaboration with government oversight. By embracing the idea of self-regulation in the SCO amidst its ambiguity, it is suggested that Sasol SA Ltd, in my view, may consider:

- (a) continually reviewing its own internal standard operating procedures in regard to environmental governance and subsequent continual improvement;
- (b) adopting the relevant management standards taking cognisance of its operational activities in terms of section 23A of the NEMA; and
- (c) determining its applicable reasonable legislative and other measures to strengthen the entity's compliance culture.

Financial costing of compliance always competes with production costs. A balanced view from a committed and supportive executive and senior management is required to ensure an efficient self-governance regime within an approved cost-containment strategy. A corporate conscience towards compliance could initiate and encourage a proactive compliance culture in the organisation. It is suggested that the organisation should adopt a self-regulatory environmental governance framework that is to be supported by a committed management structure, devoted, skilled and experienced employees who would respond to legislative demands and/or requirements with the required resources, training and appropriate interventions to objectively demonstrate sustained and proactive legal compliance.

- May consider a more streamlined approach during the design phase of its self-regulatory governance strategy to make better decisions:

The design of a voluntary sector-based instrument for Sasol SA Ltd in terms of section 23A(2) of the NEMA for consideration and approval by the Minister should adhere to specific requirements. It should, amongst other things:

- (a) integrate environmental considerations into decision-making relevant to the needs of all affected and interested parties and community stakeholders where it operates;
- (b) provide for the implementation of environmental best practice by comparing similar industries, both local and international;
- (c) promote the progressive adoption of environmentally sound technology in its operations which could have a significant cost implication and may deter the

entity in the short term. However, the literature seems to suggest that the long-term benefits of self-regulation outweigh the short-term expenses; or

- (d) promote sustainable energy and resource (feedstock) consumption and production output, including, where appropriate, eco-endorsement or labelling of its products and processes, having regard for the environmental impacts of a certain product which in some instances cause irreversible environmental damage and also by actively managing the organisation's carbon footprint.

Additionally, compliance management software system designers in the company should be mindful that the IMS and telecommunication systems available in the organisation to provide a platform for self-regulation may not be able to share data sets between the different platforms within manufacturing plants or sections of the company as large and complex as Sasol SA Ltd. Different software programs are sometimes used for the diverse self-regulatory interventions which may not be compatible and practical in an operational environment where the focus is on operations and manufacturing. It is also noted that the use of different software platforms for compliance is costly. The ideal legal register and compliance management system in my view should be able to:

- (a) provide access to the most recent and therefore all legislative and other measures applicable to all OMEs in Sasol SA Ltd to measure, monitor and maintain legal compliance objectively and in a sustainable manner;
- (b) include legislative measures per OME in reference to: national law, incorporated SANS codes, international treaties, provincial law and proclamations, local by-laws, amongst other things;
- (c) include other measures per OME in reference to permits, licences and authorisations, directives, exemptions, concessions, registrations, agreements, court precedents, compliance notices and government orders, industry standards and codes, Responsible Care®, ISO 9001, ISO 14001 and ISO 45001 standards, product stewardship and process safety management standards, policies, codes of practice as well as identified OME SHE minimum requirements;

- (d) provide an indication of relevancy of the compliance obligations to the OME as required by clause 6.1.3 of ISO 14001:2015;
- (e) facilitate a shared understanding of the OME business requirements in its specific legislative context underlined by its legal register;
- (f) provide an overview of future legislative development to align OME business process as early as possible to ensure smooth transition of operational processes to newly promulgated legal requirements;
- (g) draw compliance reports for each OME and/or business unit against its applicable legal register in a format that could be integrated in Exco reports;
- (h) send compliance actions to relevant accountable and responsible senior management to monitor and ensure sustained compliance with legal and other requirements as well as licence and permit conditions;
- (i) prompt the relevant control owner when a particular compliance action is due as well as submission of new applications and/or renewal of current permits and licences to the correct regulatory agency to reduce lead time for authorisation approvals;
- (j) allow exporting compliance actions into a spreadsheet format for easy updating of compliance status and re-uploading new status into the legal register;
- (k) enable uploading of documentary evidence to close compliance breaches;
- (l) support root cause analysis interventions for the monitoring and investigation of non-compliances and the application of the appropriate mitigation measures; and
- (m) provide the required data analysis with predictive capability to ensure early detection of possible future compliance breaches, thus ensuring a proactive approach to compliance for easy monitoring and subsequent preventive strategies to mitigate possible breaches.

Furthermore, the correct completion of compliance checklists to maintain management systems and the uploading of compliance supporting documentation could encroach on valuable production time. However, the digitisation of compliance monitoring is proposed. Management may need to take valuable time from production schedules to collate information and data to guarantee compliance integrity. The integrity of data sets and their inability to integrate across factory

sections and information management platforms sometimes place the reliability of assurance reporting at risk, resulting in a false sense of the truth. Correct information extracting from such data sets to determine certain trending patterns, predict future compliance outcomes and identify non-compliances could become ambiguous because of unreliable data.

- May focus on details to address confusing, complex and poorly prepared EMPs, policies and procedures contradicting legal requirements from overlapping jurisdictions:

Internal audits against EA and EMP conditions allow Sasol SA Ltd to revise its EAs to address poorly stated and ambiguous permit and licence conditions. Compliance strategies to mitigate poorly structured and sometimes ambiguous compliance conditions are resource-intensive and put unnecessary pressure on cost containment interventions while providing a skew picture of compliance. Continuous review of internal policies and procedures with a focus of continual improvement of management systems to ensure optimal compliance is recommended. Legal compliance audits contemplated by the *EIA Regulations, 2014* as amended not only provide Sasol SA Ltd with an opportunity to amend EAs and EMPs but also the prospect to improve and sustain compliance management. An authorisation issued by a specific competent authority could require the holder thereof to comply with legal requirements within the jurisdiction of a different competent authority which may sometimes be confusing and contradictory as well as challenging. It is recommended that EMP conditions of all Sasol SA Ltd's OMEs be aligned with business requirements annually in line with its internal second-party audits as opposed to the five-year cycle proposed by the *EIA Regulations, 2014* as amended.

- May consider a more effective measuring and compliance reporting:

The integrity of internal and external audits in the SCO and subsequent compliance reporting at Sasol SA Ltd rely on effective measuring, monitoring and inspections. The organisation should therefore take time to develop an effective compliance monitoring programme that will exercise due diligence to prevent and detect

compliance breaches in advance to further capitalise on its embedded compliance culture that continuously inspires and encourages ethical conduct. A commitment to compliance with the legal and other requirements at the organisation should be the central objective of its compliance monitoring programme.

- Ensure that internal and external communication to industry, state agencies and community stakeholders is thorough and clear to avoid misunderstandings:

Misunderstandings of compliance requirements could be detrimental since legal non-compliance creates business risks for Sasol SA Ltd that could include loss of reputation, fines, civil claims and/or suspension or withdrawal of permits, licences and authorisations. The environment governance strategy of the SCO is premised on engagement with government and collaboration with all stakeholders. This approach will not only provide support to diffuse possible or actual risks for Sasol SA Ltd thereby posing serious threats to business stability, profitability, and sustainability but will also result in the required mitigation strategies that generally enjoy priority and commitment from organisational management. Sasol SA Ltd is applauded for its dedicated Corporate Affairs department that is mandated to communicate with internal and external stakeholders and relevant regulatory agencies on all business-related matters to maintain effective and sustainable stakeholder relationships across the business.

- May consider embracing the establishment and maintenance of its reputation as being a competent and trustworthy surrogate regulator:

As a leading energy, petroleum and petrochemical company, Sasol SA Ltd is well positioned to play a significant role to influence environmental governance strategies proposed by the regulator through its strategic input to achieve the objectives of section 24 of the *Constitution*. Furthermore, as indicated in this study, hybrid environmental governance could facilitate constructive cooperative partnerships between different stakeholders. It is suggested that Sasol SA Ltd should maintain regulatory compliance with its internal management systems to uphold its brand image while protecting the environment in a sustainable manner.

The organisation is committed to high standards of integrity and fair dealings in its business operations across South Africa and in my view should celebrate its self-regulatory success. This commitment is driven by the necessary competence and ethical actions espoused by its management in discharging their responsibility objectively and effectively to provide strategic direction and control of the company to manage legal compliance. The SCO is ensuring sustainable compliance by addressing all legal non-compliances in its SHE governance and assurance framework.

6.2.2 Legal recommendations

In conclusion, it is recommended that the petrochemical industry in South Africa:

- May consider developing its own sector-based voluntary instrument contemplated in section 23A of the NEMA for consideration and endorsement by the Minister in terms of sections 23A(3)(a) and (b) of the Act;⁷⁰²
- Take note that the Minister's approval of the IEMP of the SKA at the time of the study in terms of which the entity is exempted from obtaining an authorisation for phase 1 of its developments is not only a first for a South African-based entity, but also provides an opportunity for the petrochemical industry to have its own industry EMP;
- Be afforded an opportunity for the submission of an industry EMP in terms of section 24(2)(e) of the NEMA read with the provisions of GN R542 in GG 42380 on a collaborative manner as the relevant expertise in government to enforce legal compliance in such a complex sector may not necessarily be available;
- Should note that the exemption for a requirement of an EA does not preclude the petrochemical industry from environmental enforcement as it still has to comply with its approved EMP and in terms of section 24(2)(b) of the NEMA still has an obligation to comply with prescribed norms and standards; and
- Should engage the Minister in terms of his/her facilitative role to achieve integrated, environmentally sustainable and sound management contemplated in section 23A(1) of the NEMA to consider and approve a proposed industry or sector-

⁷⁰² Refer to paragraph 3.4 in Chapter 3 for a discussion.

based voluntary instrument for each stage of the product life-cycle to provide for regulatory innovation.

Annexures

Annexure A: Approval for the study



Memorandum

To: Jacques Hurter, Senior Manager SHE GARR, SCO
Sugnet Dixon, VP: SHE, SCO
Simon van Renssen

Cc:

From: Noel Smit

Date: 5 June 2018

Subject: Approval for LLM Dissertation

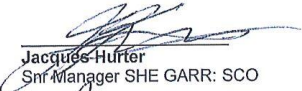
This memorandum serves to request a approval form my direct line management for my proposed LLM-dissertation at the North West University.

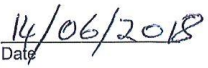
Paragraph 6.3.2 of the *HR Regional Policy: Study Aid* of 20 March 2017 (HR-RP-POE-SA 105) requires that I obtain such approval in line with the terms and conditions of the agreement between myself and SCO which finance these studies.

The title of my dissertation is: *Environmental legal compliance through self-regulation in the petro-chemical industry in South Africa*. My enquiry wish to answer the following research question: *How could self-regulation contribute to achieve environmental legal compliance from a governance, assurance and risk management perspective within the petro-chemical industry in South Africa?* The outcome of my research will only be made available to the North West University. I've attached a copy of my research proposal for your reference.

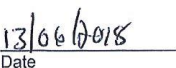
The thesis is a final requirement for the completion of my LLM in Environmental Law and Governance. Approval for my thesis will therefor be appreciated. The study will be conducted through a comprehensive literature review of existing primary and secondary sources, case law, journal articles, electronic sources and material of other disciplines. A selection of South African legislation and regulations will be studied. I may also refer to some internal procedures and regulations within SCO for which I will obtain prior approval and will respect the relevant IP protocol in this regard. No direct reference to such sources will be made in the absence of such approval.

APPROVED / NOT APPROVED


Jacques Hurter
Snr Manager SHE GARR: SCO


Date 14/06/2018


Sugnet Dixon
Vice President
SHE: SCO


Date 13/06/2018


Co-signature: Simon van Rooyen
VP: HR
SCO

Annexure B: Declaration of language editing

Ella Belcher
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DECLARATION

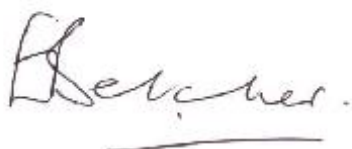
I hereby certify that the LLM dissertation mentioned below has been properly language edited. The author was responsible for the final checking of the references.

Title of dissertation

'Environmental legal compliance through self-regulation in the petrochemical industry
in South Africa'

Student

NP Smit

A handwritten signature in dark ink, appearing to read 'Belcher', with a horizontal line underneath.

ELLA BELCHER
Somerset West
16 September 2019

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