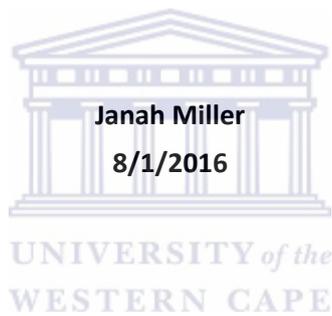


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Promoting sustainable development in South Africa: Environmental regulation in support of renewable energy

Submitted in partial fulfilment of the requirements for the LLM degree in the Faculty of Law of the University of the Western Cape



Supervisor: Prof W Scholtz

LLM – Mini dissertation (approximately 30 000 words)

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AEL	Atmospheric emission licence
CA	Competent authority
CSD	Commission on Sustainable Development
DEA	Department of Environmental Affairs
DMR	Department of Mineral Resources
DoE	Department of Energy
DWA	Department of Water Affairs
ECA	<i>Environment Conservation Act 73 of 1989</i>
EA	Environmental authorisation
EIA	Environmental impact assessments
EIP	Environmental implementation plans
EMF	Environmental management frameworks
Energy Minister	Minister responsible for energy
EMP	Environmental Management Plans
EMPr	Environmental Management Programme
Environment MEC	Member of the Executive Council of a province who is responsible or environmental affairs
Environment Minister	Minister responsible for environmental affairs
GW	Gigawatt
GWh	Gigawatts per hour
IEM	Integrated environmental management
IPP	Independent power producer
IPPPP	Independent Power Producer Procurement Programme
IRP	Integrated Resource Plan
Johannesburg Declaration	Johannesburg Declaration on Sustainable Development
JPOI	Johannesburg Plan of Implementation of the World Summit on Sustainable Development
MG	Megawatt
Minerals Minister	Minister responsible for mineral resources
MPRDA	Mineral Petroleum and Resources Development Act
MTSF	Medium-Term Strategic Framework
NEMA	<i>National Environmental Management Act 107 of 1998</i>
NEMA Principles	Principles as set out in section 2 of the NEMA
NEM:AQA	<i>National Environmental 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 Act 59 of 2008</i>
NERSA	National Energy Regulator of South Africa
NSSDI	National Strategy for Sustainable Development and Action Plan
NWA	<i>National Water Act 36 of 1998</i>
PPA	Power purchase agreements
PV	Photovoltaic
S&EIA	Scoping and environmental impact assessment
SEMA	Specific environmental management act as defined in section 1 of the NEMA
SEA	Strategic environmental assessment
SE4A	Sustainable Energy for All

Sustainable development goals	Transforming our world: the 2030 Agenda for Sustainable Development.
RDP	<i>Reconstruction and Development Programme</i>
REIPPPP/ Rei4P	Renewable Energy Independent Power Producer Procurement Programme
UNEP	United Nations Environmental Programme
UNGA	United Nations General Assembly
WUL	Water use licence
Water Minister	Minister responsible for water affairs
WSSD	World Summit on Sustainable Development
WUL	Water use licence



PLAGIARISM DECLARATION:

‘I declare that *Promoting sustainable development in South Africa: Environmental regulation in support of renewable energy* is my own work, that it has not been submitted before for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged as complete references’.



Signed

Date:



1. CHAPTER 1: INTRODUCTION

1.1. PROBLEM STATEMENT AND SIGNIFICANCE

South Africa is a developing country still recovering from the injustices of apartheid. Government policy post 1994 has consistently emphasised as top priorities the development of the economy, reduction in unemployment rates and the alleviation poverty.¹ It is widely accepted that access to affordable energy is essential for socio-economic development² and that energy contributes to ‘successful and sustainable national growth, and development strategy’.³ This is because energy contributes to economic growth, the creation of employment and plays an important role in the social infrastructure of households.⁴ Yet, the energy sector also has a significant impact on the environment.⁵ Of greatest concern currently is the impact that energy produced from the burning of fossil fuels resulting in the release of significant amounts of greenhouse gasses into the atmosphere has on climate change. South Africa in particular is heavily reliant on coal for the production of energy with approximately 77% of its primary energy needs being supplied by coal.⁶ This is unlikely to change in the near future.⁷ In addition to climate change impacts, the production of energy has various environmental impacts throughout the energy lifecycle. These include, among others, the loss of biodiversity, water and air pollution, and disposal of waste and other hazardous chemicals.⁸

¹ Ministry of the Office of the President *The White Paper on Reconstruction and Development Programme* (GN 16085 GG 1954 of 15 November 1994) (hereinafter referred to as the Reconstruction and Development Programme) ch 3.2; Ministry of Economic Development *The New Growth Path: A Framework* (2011) (hereinafter referred to as The New Growth Path); The National Planning Commission *National Development Plan 2030: Our Future – Make It Work* 2012 (hereinafter referred to as the NDP).

² Barnard M *Nuclear energy in Africa: A legal framework for sustainable energy access* (unpublished thesis submitted for the degree Doctor Legum, North-West University, 2014) pg 5 where she refers to UN Report of the World Summit on Sustainable Development (2002) A/CONF. 199/20 17.

³ *The New Growth Path* (2011) pg 27; Department of Minerals and Energy *The White Paper on the Energy Policy of South Africa* (GN 3007 GG 19606 17 December 1998), pg 21 (hereinafter *the White Paper on Energy Policy*).

⁴ *The White Paper on Energy Policy* 21-22.

⁵ *The White Paper on Energy Policy* 87-94.

⁶ Department of Energy: Coal Resources: Overview at http://www.energy.gov.za/files/coal_frame.html (accessed 14 January 2016).

⁷ Department of Energy: Coal Resources: Overview at http://www.energy.gov.za/files/coal_frame.html (accessed 14 January 2016).

⁸ Wildermuth A ‘The Next Step: The Integration of Energy Law and Environmental Law’ 31 *Utah Environmental Law Review* 375-80.

The right to an environment that is not harmful to health or well-being has been elevated to a fundamental human right in section 24 of the Constitution of the Republic of South Africa.⁹ The environmental right¹⁰ incorporates the salient features of sustainable development¹¹ where section 24(b) places an explicit duty on the government to protect the environment for present and future generations and to realise by means of legislation and other measures ecological sustainable development and use of natural resources while promoting justifiable economic and social development. The environmental right therefore establishes the notion that environmental law in South Africa is based on the concept of sustainable development.¹² Environmental laws enacted *in lieu* of the duties created by the environmental right must give effect to its requirements, including the concept of sustainable development.

The National Environmental Management Act¹³ was enacted to give effect to environmental right and serves as framework legislation for environmental management. The NEMA principles set out in s2 of NEMA¹⁴ elaborates on and give guidance to the interpretation of the constitutionally entrenched concept of sustainable development.¹⁵ The NEMA principles are applicable throughout South Africa to the actions of all organs of state that may significantly affect the environment¹⁶ and guide the interpretation, administration and implementation of the NEMA and any other law concerned with the protection or management of the environment.¹⁷

The environmental right and the NEMA principles establish the requirement of sustainable development. Sustainable development, as interpreted in our law, requires the integration of

⁹ *The Constitution of the Republic of South Africa* 1996 (hereinafter the *Constitution*).

¹⁰ s24 of the *Constitution* (hereinafter 'the environmental right').

¹¹ The United Nations General Assembly *The Report of the World Commission on Environment and Development: Our Common Future* (Transmitted to the General Assembly as an Annex to document A/42/427 - Development and International Co-operation: Environment) (hereinafter the *Brundlandt Report*), ch2 defines sustainable development to mean 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'.

¹² Glazewski, J *Environmental Law in South Africa* November (2015) - SI 3, ch 1.4; *BP Southern Africa (Pty) Ltd v MEC for Agriculture, Conservation, Environment and Land Affairs* [2004] 3 All SA 201 (W) at 144A-144C; *Fuel Retailers Association of Southern Africa v Director-General: Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province, and Others* (2007) (6) SA 4 (CC) at para 45 22B-22D.

¹³ *The National Environmental Management Act* 107 of 1998 (hereinafter the *NEMA*).

¹⁴ s2 of *NEMA* (hereinafter the *NEMA Principles*).

¹⁵ Defined in section 1 of *NEMA* to mean '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'; see also s2(3) and 2(4)(a) of *NEMA*.

¹⁶ s2(1) of the *NEMA*.

¹⁷ s2(1)(e) of the *NEMA*.

economic, social and environmental concerns.¹⁸ Given the clear impact energy has on the environment one would assume that regulation of energy and the environment are sufficiently integrated to appropriately manage the environmental impacts of energy projects and energy planning so as to comply with the constitutional right with regards to sustainable development. Energy planning and services will be sustainable if it promotes development that is economically, environmentally and socially sound.¹⁹ In this context, renewable energy²⁰ is regarded as being more sustainable²⁰ compared to energy from coal and other fossil fuels.²¹

However, it does not appear as though energy planning is occurring within a framework of sustainable development thereby ensuring sustainable energy solutions. This is proven rather than controverted by the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP).²² First, the initial impetus to include renewable energy in the national integrated electricity plan appears to have been the 2008 electricity blackouts requiring security of supply, and not the pursuit of sustainable energy solutions in and of itself.²³ This is supported by the delay in developing the REIPPPP and related regulatory framework despite the call for investigation of renewable energy solutions under the White Paper for Energy and its endorsement under the White Paper on Renewable Energy. Secondly, even though the REIPPPP has received international recognition for its success, its continued existence is currently under threat where the Eskom board recently took a decision not to sign any further power purchase agreements with private producers after the current round is finalised.²⁴

¹⁸ *Fuel Retailers* case para 45, 50, 61, 71.

¹⁹ Barnard M (2014) 124.

²⁰ Referring only to energy from wind, biomass, hydro, solar, wave energy, ocean currents and waste.

²¹ Murombo T (2015) 2.

²² Department of Energy *State of Renewable Energy in South Africa* (2015) 4 (hereinafter *the State of Renewable Energy Report*). The Department of Energy *The Integrated Resource Plan 2010-2030: Update Report (2013)* (http://www.doe-irp.co.za/content/IRP2010_updatea.pdf) (hereinafter the *IRP2*) provided the impetus for investment in renewable energy which estimates that electricity demand by 2030 will require an increase in generation capacity of over 46GW, of which 23,6GW is from renewables (including hydro power). This means that 26% of the total new energy requirements by 2030 are to be supplied by renewable source (including hydro). Under the *Electricity Regulations Act 4 of 2006*, as amended, and the *Electricity Regulations on New Generation Capacity* (GN 34262 GG 9530 4 May 2011), three Ministerial Declarations have been issued for the procurement of renewable energy: 3,725MW by 2016, 3200MW by 2020 and 6300MW by 2025.

²³ *State of Renewable Energy in South Africa* (2015) Forward by Minister of Energy Tina Joemat Peterson (MP); Murombo T (2015) 27.

²⁴ Paton C 'Eskom cuts off private power' *Business day live* <http://www.bdlive.co.za/business/energy/2016/07/21/eskom-cuts-off-private-power> (accessed 19 August 2016).

1.2. RESEARCH QUESTION

The dissertation explores whether the concept of sustainable development has succeeded in ensuring sustainable energy solutions in the promotion of renewable energy. In this dissertation sustainable energy solutions refer to environmentally friendly energy options. The dissertation critically assesses the status of sustainable development and criticisms levelled against it. The dissertation continues to apply these to the intersections between environmental law²⁵ and energy law in assessing why sustainable development may have failed in ensuring sustainable energy solutions.

1.3. ARGUMENT

The dissertation argues that it is necessary to consider intersections between environmental law and energy law²⁶ within an overarching framework of sustainable development, entrenched in s24 of the Constitution, in order to ensure future energy planning and development results in sustainable energy solutions that is constitutionally defensible. It is further argued that renewable energy is a source of sustainable energy.

The realisation of sustainable energy is hampered for two reasons. Although sustainable development has been lauded for bringing together divergent issues under one concept, one of the main criticisms levelled against sustainable development is its failure to achieve integration in practice.²⁷ Two reasons are explored in this dissertation for this.

The first reason relates to the failure of the energy law order to sufficiently incorporate environmental concerns while pursuing economic and socio objectives, such as access to affordable energy. Sustainable development as interpreted in our law requires the integration

²⁵ Environmental law is used narrowly in this thesis to only include the *NEMA* and specific environmental management acts as defined in *NEMA* which include the *Environment Conservation Act 73* of 1989 (hereinafter the *ECA*); the *National Water Act 36* of 1998 (hereinafter the *NWA*); the *National Environmental Management: Protected Areas Act 57* of 2003 (hereinafter the *NEM:PAA*); the *National Environmental Management: Biodiversity Act 10* of 2004 (hereinafter the *NEM:BA*); the *National Environmental Management: Air Quality Act 39* of 2004 (hereinafter the *NEM:AQA*); the *National Environmental Management: Integrated Coastal Management Act 24* of 2008 (hereinafter the *NEM:ICMA*); the *National Environmental Management: Waste Act 59* of 2008 (hereinafter the *NEM:WA*); or the *World Heritage Convention Act 49* of 1999 (hereinafter the *World Heritage Convention Act*) (hereinafter collectively referred to as *SEMAs*).

²⁶ South African energy legislation does not deal with energy from the cradle to the grave. Extraction, production and processing of primary energy sources are dealt with separately under the *Mineral and Petroleum Resources Development Act 28* of 2002 (hereinafter the *MPRDA*) and are generally referred to as 'mining law'.

²⁷ Viñuales JE 'The Rise and Fall of Sustainable Development' (2013) 22 *R.E.C.I.E.L.* 6-7.

of economic, social and environmental concerns.²⁸ Sustainable development is further characterised as an ideal.²⁹ In order to ensure environmental concerns are given due consideration by the energy law order legal rules must be established setting out duties and obligations with regard to the incorporation of environmental concerns, and specifying how trade-offs between the minimization of environmental impacts and increased access to affordable energy should be dealt with.³⁰ These legal rules must be informed by clearly established and agreed legal principles. Sustainable energy must be guided by the NEMA principles.³¹ However, additional principles are arguably required in order to give more specific guidance to the formulation and application of legal rules applicable sustainable energy solutions.

The second reason relates to fragmented governance of environmental impacts of energy. It is argued that fragmentation occurs at two levels. The first level of fragmentation is observed where two separate government departments are mandated with environmental management, on the one hand, and energy on the other. Co-operative governance mechanisms aim to align government policy. However, recent amendments to the National Environmental Management Act³² have weakened the effectiveness of co-operative governance from an environmental perspective where the provisions establishing the Committee for Environmental Co-ordination and its oversight of the preparation of environmental implementation plans ('EIP') or environmental management plans ('EMP') by specified state departments have been repealed. Fragmentation between energy planning and the environmental impacts of energy also exist on a project level. The integrated environmental management ('IEM') regime relating to environmental impact assessment ('EIA') aims to bridge fragmentation through various co-operative governance mechanism including requiring organs of state that also regulate aspects related to an activity requiring environmental authorisation ('EA') to participate in the public participation process³³ and empowering integrated authorisation.³⁴ However, these mechanisms have not been utilised to maximise the streamlining of the consideration of environmental impacts arising from energy projects.

²⁸ *Fuel Retailers* - case para 45, 50, 61, 71.

²⁹ Verschuuren J, 'Sustainable development and the nature of environmental legal principles' *PER* 2006(1).

³⁰ Viñuales JE (2013) 6-7.

³¹ s4(1)(a) and (e) of the *NEMA*.

³² *National Environmental Laws Amendment Act* 14 of 2009 (hereinafter the *NEMLA*).

³³ s24(4)(a)(v) of the *NEMA* read with regulation 19, 21 and 23 of the *EIA Regulations*.

³⁴ s24L of the *NEMA*.

A second level of fragmentation is observed in environmental management law order with regards to the EIA regime under the NEMA and other specific environmental management acts ('SEMA's').³⁵ Fragmentation is observed on a vertical and horizontal level; and from an institutional³⁶ and legislative perspective.³⁷

Fragmentation firstly hinders the effective alignment of government action in order to ensure the integration of economic, social and environmental concerns. Fragmentation further manifestly contradicts cooperative, holistic and integrated governance, as required by IEM³⁸ and may result in unsustainable results,³⁹ undermining the realisation of sustainable development. An environmental management tool which could enhance cooperative governance and support the development and uptake of renewable energy is the strategic environmental assessment ('SEAs'). SEAs could be employed to assess the environmental impacts arising from energy policies, programmes and plans, and to determine sustainability criteria and parameters in energy decision-making. It can also provide a platform for cooperative governance for various state departments to actively participate in the SEA process and contribute to subject areas in which they have particular expertise.⁴⁰ However, although this environmental management tool has been used in practice, it is insufficiently regulated with very little guidance in law as to its function and how it should be utilised.

1.4. LITERATURE SURVEY

Murombo argues that sustainable energy can be facilitated through the integration of energy and environmental regulation⁴¹ and environmental standards should guide the development of energy policies.⁴² Murombo further argues that if sustainable development is properly implemented, it will lead to the development of sustainable energy systems.⁴³ He explores environmental regulation in South Africa and argues that environmental law has done more

³⁵ s1 of the *NEMA*.

³⁶ Kotze LJ 'Improving unsustainable environmental governance in South Africa' *PER* 2006(1) 3-15.

³⁷ Kotze LJ (2006) 3-15.

³⁸ Refer to the definition of 'environment' in s1 of the *NEMA*; Kotze LJ (2006) 19.

³⁹ Kotze LJ (2006) 19.

⁴⁰ Glazewski J (2015) ch10.1.

⁴¹ Murombo T (2015).

⁴² Murombo T (2015) 10.

⁴³ Murombo T (2015) 17.

to implement sustainable development than energy law.⁴⁴ He argues that while the EIA process as provided for in NEMA has the potential to promote sustainable energy sources, environmental law in general fails to achieve this.⁴⁵ Murombo focusses on investigating the spaces within energy policy and energy laws where integration of energy and environmental law can be accommodated.⁴⁶ The author will attempt a similar exercise however using as a starting point criticisms levelled against the concept of sustainable development to assess why integration has not been achieved to date. The author will also discuss the role of integrated, coherent and cooperative governance required to ensure sustainable energy solutions are achieved so as to further the ideal of sustainable development. To this end, this dissertation also considers the role SEAs can play in streamlining environmental considerations in energy policy and planning to facilitate the achievement of the objectives of the principles of sustainable development.

In a paper by Barnard,⁴⁷ she considers the role of international sustainable development principles in enabling effective renewable energy policy in South Africa by assessing South African law and policy relating to renewable energy and legal developments with regards to sustainable development. She considers whether and to what extent these laws and policies incorporate the seven principles of sustainable development as identified by the International Law Association Committee on Legal Aspects contained in the 2002 New Delhi Declaration.⁴⁸ She concludes that these regulatory mechanisms either directly or indirectly incorporate or refer to the seven New Delhi Principles.⁴⁹ As such she further concludes that national renewable energy policy is therefore “*a viable reaction to sustainable development challenges*”.⁵⁰

This dissertation focusses on how the concept of sustainable development has been interpreted and applied in terms of South African law and how this interpretation has influenced policy relating to sustainable energy solutions with regards to renewable energy as a source thereof.

⁴⁴ Murombo T (2015) 6.

⁴⁵ Murombo T (2015) 6-7.

⁴⁶ Murombo T (2015) 12-29.

⁴⁷ Barnard M 'The role of international sustainable development law principles in enabling effective renewable energy policy – A South African perspective' (2012) 15(2) *PER*.

⁴⁸ Resolution of the 70th Conference of the International Law Association in New Delhi, India, 2-6 April 2002. (hereinafter the *New Delhi Declaration*.)

⁴⁹ Barnard M (2012) 234.

⁵⁰ Barnard M (2012) 235.

The intersection between environmental law and energy law was also explored by Wildermuth⁵¹ and Davies.⁵² These articles focus on national law in the United States and are therefore not directly relevant to South Africa. Bruce⁵³ considers whether international law, including international environmental law, facilitate sustainable energy. Again, this article may be informative in shaping relevant questions to consider, but it does not directly consider this question from a South African law perspective.

1.5. OUTLINE OF ARGUMENT IN DISSERTATION

The first chapter of the dissertation gave an introduction to the research question which will be considered and provides an overview of the argument which will be expanding on in the rest of the chapters.

The second chapter critically considers the environmental right in the Constitution and how it has been interpreted with regards to the concept of sustainable development. The chapter further explores the relationship between sustainable development and sustainable energy with regards to renewable energy as a source of sustainable energy. The chapter critically assesses the normative characterisation of sustainable development and criticisms levelled against its practical application. The chapter identifies two reasons as to why sustainable development as an ideal may have failed in ensuring sustainable energy solutions in practice. Chapter 3 considers the energy law regime and whether the concept of sustainable development is sufficiently incorporated and given practical content by means of specific legal rights and duties. Chapter 4 explores the fragmentation which occurs at a horizontal and vertical level which may hamper the achievement of sustainable development, which requires integration.

Chapter 5 provides a concise summation of the conclusions reached with regards to the research question posed by the dissertation.

⁵¹ Wildermuth AJ 'Is environmental law a barriers to emerging alternative energy sources?' (2009-2010) 46 *Idaho Law Review* 509 and Wildermuth AJ 'The next step: the integration of energy law and environmental law' (2011) 31 *Utah Environmental Law Review* 369.

⁵² Davies LL 'Alternative energy and the energy-environment disconnect' 46 473 *Idaho Law Review* 2009-2010.

⁵³ Bruce S 'International law and renewable energy: facilitating sustainable energy for all?' (2013) 14 *Melbourne Journal of International Law*.

1.6. METHODOLOGY

The author conducted a desktop research of relevant laws, case law and policies which informed the research question and arguments presented in the dissertation. The author also critically reviewed academic articles, papers and theses relevant to the research question.

1.7. CLARIFICATION OF DEFINITIONAL ISSUES

From an environmental law perspective, the dissertation will focus on the NEMA and the SEMAs as defined in NEMA. The dissertation will not include a consideration of land use planning laws, and laws which may impact on the environment but which does not fall within the ambit of the Department of Environmental Affairs' (DEA) mandate.

Reference to energy law will be confined to the law order relating to the generation of electricity from coal.



2. CHAPTER 2: SUSTAINABLE DEVELOPMENT AND SUSTAINABLE ENERGY

2.1. INTRODUCTION

The Constitution is the supreme law of our democracy and it includes in the Bill of Rights the environmental right.⁵⁴ The environmental right incorporates the salient features of sustainable development⁵⁵ and establishes the notion that environmental law in South Africa is based on the concept of sustainable development.⁵⁶ It is therefore necessary to begin the dissertation by critically considering the concept of sustainable development and its relation to the sustainable energy.

2.2. WHAT IS SUSTAINABLE DEVELOPMENT

2.2.1. International conceptualisation of sustainable development

The fall of apartheid and the advent of South Africa's new constitutional democracy fortuitously coincided with major developments in international environmental law at the time,⁵⁷ specifically with regard to the development of the concept of sustainable development as an essential feature of environmental law. Although the development on the international front happened by way of soft law instruments⁵⁸ which did not directly influence the incorporation of the environmental right in the Constitution, our understanding of key concepts incorporated in the environmental right should be guided and informed by these developments.⁵⁹

⁵⁴ s24 of the *Constitution*.

⁵⁵ The United Nations General Assembly *The Report of the World Commission on Environment and Development: Our Common Future* (Transmitted to the General Assembly as an Annex to document A/42/427 - Development and International Co-operation: Environment) (hereinafter the *Brundlandt Report*), ch2 defines sustainable development to mean 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'.

⁵⁶ Glazewski, J *Environmental Law in South Africa* November (2015) - SI 3, ch 1.4; *BP Southern Africa (Pty) Ltd v MEC for Agriculture, Conservation, Environment and Land Affairs* [2004] 3 All SA 201 (W) at 144A-144C; *Fuel Retailers* – case para 45 22B-22D.

⁵⁷ Christiansen S 'Empowerment, fairness, integration: South African answer to the question of constitutional environmental rights' 32 215 (2013) *Stanford Environmental Law Journal* 219-220.

⁵⁸ Soft law usually refers to declarations and statements which are not binding but have persuasive power. This is opposed to 'hard law' such as treaties which establish binding rights and obligations for member states.

⁵⁹ *Fuel Retailers* –case para 46-56.

In its modern conceptualisation, sustainable development can be traced back to the Founex Report on Development⁶⁰ which called for the incorporation of environmental issues and goals in the concept of development.⁶¹ The Founex Report recognised that environmental concerns in developing countries must be seen on the context of urgent developmental objectives as well as unique environmental problems which differ from those faced by industrialised countries. The Founex Report played an important role in encouraging developing countries to participate in the 1972 UN Conference on the Human Environment where a declaration was adopted generally referred to as the Stockholm Declaration.⁶² Although the term ‘sustainable development’ was not specifically referred to in the Stockholm Declaration, many of its principles incorporate essential elements which would later be recognised as forming part of the concept of sustainable development.⁶³ The term ‘sustainable development’ was coined in the Brundlandt Report and defined to mean ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs’.⁶⁴ The incorporation of the sustainable development in the Brundlandt Report served as a catalyst for its formal recognition in the 1992 Rio Declaration on Environment and Development.⁶⁵ It has been reaffirmed and further development in the UN Millennium Declaration;⁶⁶ in the Johannesburg Declaration on Sustainable Development (Johannesburg Declaration) and the Plan of Implementation of the World Summit on Sustainable Development (the JPOI) adopted at the World Summit on Sustainable Development;⁶⁷ the Future We Want adopted at the UN Conference on Sustainable Development; at Rio+20⁶⁸; and, most recently, the establishment of the Sustainable Development Goals, officially called the Transforming our world: the 2030 Agenda for Sustainable Development.⁶⁹

⁶⁰ The Secretary-General of the U.N. Conference on the Human Environment convened a panel discussion of experts from all regions of the world at Founex, Switzerland. These discussions resulted in the *Founex Report on Development and Environment* (1971) (hereinafter the *Founex Report*).

⁶¹ *Founex Report* (1971) para 1.7.

⁶² United Nations Environment Programme *Declaration of the United Nations Conference on Human Environment Stockholm* (1972) (hereinafter the *Stockholm Declaration*).

⁶³ See for example Principle 8, 10, 11 and especially Principle 13 of *Stockholm Declaration* which state that ‘(i)n order to achieve a more rational management to resources and this to improve the environment, States should adopt an integrated and coordinated approach to their development planning so as to ensure that development is compatible with the need to protect and improve environment for the benefit of their population’.

⁶⁴ *Brundlandt Report* at 43.

⁶⁵ Principle 2 *Report of the United Nations Conference on Environment and Development*, 1992 UN Doc A/CONF 151/26 (hereinafter the *Rio- Declaration*).

⁶⁶ United Nation 55/2 United Nations Millennium Declaration Part IV item 22.

⁶⁷ World Summit on Sustainable Development *Johannesburg Declaration on Sustainable Development 2002* A/CONF.199/20.

⁶⁸ General Assembly of United Nations *Resolution of 27 July 2012 A/RES/66/288*.

⁶⁹ General Assembly of United Nations *Resolution of 25 September 2015 A/RES/70/1*.

There is no binding definition of sustainable development in international environmental law.⁷⁰ Evolving elements of the concept have been identified by commentators and academics which guide the ambit and content of sustainable development.⁷¹ The International Law Association Committee on Legal Aspects identified seven principles in the 2002 New Delhi Declaration⁷² which are 1) the duty of states to ensure the sustainable use of natural resources, 2) the principle of equity and eradication of poverty, 3) the principle of common but differentiated responsibilities, 4) the principle of precautionary approach to human health, natural resources and ecosystems, 5) the principle of public participation and access to information and justice, 6) the principle of good governance, and 7) the principle of integration and interrelationship in relation to human rights and social, economic and environmental objectives.⁷³

2.2.2. South African conceptualisation of sustainable development

2.2.2.1. The environmental right

Since the 1972 Stockholm Declaration many national constitutions have incorporated references to the environment with regards to fundamental human rights,⁷⁴ although no substantive link between human rights and environmental rights have yet been included in any binding international instrument.

Due to several opportune conditions, both the Interim Constitution of the Republic of South Africa⁷⁵ and the Constitution recognise substantive environmental rights as basic, justiciable human rights.⁷⁶

⁷⁰ *Fuel Retailers* - case par 51.

⁷¹ In the *Fuel Retailers* case par 51, Ngcobo J referred to the following evolving principles identified by international law commentators: the principle of integration, the principle of sustainable use and exploitation of natural resources; the principle of inter-generational and intra-generational equity. Sands identifies the following five elements: 1) the need to preserve natural resources for the benefit of future generations; 2) the aim of exploiting natural resources in a manner which is 'sustainable', 'prudent', 'rational', 'wise' or 'appropriate'; 3) the 'equitable' use of natural resources and 4) the need to ensure that environmental considerations are integrated into economic and other development plans, programmes and projects, and that development needs are taken into account in applying environmental objectives. Sands P and Peel J *Principles of international Environmental Law* 3ed (2012) 207.

⁷² *New Delhi Declaration*.

⁷³ See Barnard M (2012) 15(2).

⁷⁴ Christiansen S (2013) 49 refers to the 2012 book by Boyd DR *The Environmental Rights Revolution: A Global Study of Constitutions, Human Rights, and the Environment* 50 (2012) p 49 that of 193 countries examined, 147 mention the environment in some form and as at 2011 92 have included substantive environmental rights in their constitutions.

⁷⁵ *Interim Constitution of the Republic of South Africa Act 200 of 1993 (Interim Constitution)*.

Section 24 of the Constitution provides as follows:

“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.”

The environmental right must be seen in the context of section 1(1) and 2 of the Constitution confirming the supremacy of the Constitution. Any law or conduct which is inconsistent with the Constitution is invalid⁷⁷ and all obligations imposed by the Constitution must be fulfilled.⁷⁸ The Bill of Rights⁷⁹ is the cornerstone of the South African democracy and the state must respect, protect, promote and fulfil these rights, subject only to the limitations as provided for in section 36, or elsewhere in the Bill.⁸⁰ The Bill of Rights applies to all laws and is enforceable vertically, binding the legislature, judiciary and executive and all organs.⁸¹ The Bill of Rights also applies horizontally to bind natural persons and juristic persons if, and to the extent that it is applicable, with regard to the nature of the right and the nature of the duty imposed by the right.⁸²

The significance of the inclusion of the environmental right has been recognised in case law. In the matter of *Director: Mineral Development, Gauteng Region and Sasol Mining (Pty) Ltd v Save the Vaal Environment (Save the Vaal case)*, Oliver JA emphasised that the incorporation of the environmental right in the Constitution as a justiciable, fundamental human right hailed in a new era in our South African democracy where environmental

⁷⁶ s29 of the *Interim Constitution* and s24 of the *Constitution*.

⁷⁷ s1(c) and 2 of the *Constitution*.

⁷⁸ s1(c) and 2 of the *Constitution*.

⁷⁹ ch2 of the *Constitution*.

⁸⁰ s7 of the *Constitution*.

⁸¹ s8(1) of the *Constitution*.

⁸² s8(2) of the *Constitution*.

considerations will have to be accorded appropriate recognition which should translate into a change in the ideological climate of legal and administrative processes.⁸³ In *BP Southern Africa (Pty) Ltd v MEC for Agriculture, Conservation, Environment and Land Affairs* Claassen J confirmed that the environmental right is on par with rights of freedom of trade, occupation and profession⁸⁴ and property⁸⁵ and that the environmental right should be part and parcel of considerations dealing with property, land and freedom to trade without any *a priori* grading of the rights.⁸⁶

Salient elements of the concept of sustainable development as defined in the Brundlandt Report and further developed in the international context are identifiable in s24(b). The requirement that the environment must be protected for current and future generations invokes intergenerational equity.⁸⁷ The reference to ‘ecologically sustainable development and use of natural resources’ incorporate the duty of states to manage resources in a sustainable manner.⁸⁸ It is further expressly envisaged that justifiable economic and social development must be encouraged while the environment is protected and sustainable development is secured, explicitly linking environmental protection with economic and social development. It is therefore clear that sustainable development is the ‘fundamental building block around which environmental law and norms have been fashioned ... in South Africa, and as reflected in s24(b)(iii) of the Constitution’.⁸⁹

In the *BP-case* Claassen J held that the conflicting interests present in s24(b)(iii), being environmental protection, and the promotion of justifiable economic and social development, should be resolved by means of a balancing exercise which should be conceptualised well beyond the interests of the present living generation in line with intergenerational equity.⁹⁰ Claassen J further confirmed that the environmental right in the Constitution determines that the desirability of a development will require that economic and financial viability be

⁸³ *Director: Mineral Development, Gauteng Region and Sasol Mining (Pty) Ltd v Save the Vaal Environment* 1999 2 SA 709 (SCA) par 19; also see *BP Southern Africa* – case (2004) 217.

⁸⁴ s22 of the *Constitution*.

⁸⁵ s25 of the *Constitution*.

⁸⁶ *BP Southern Africa*-case (2004) 218.

⁸⁷ *BP Southern Africa* – case (2004) 218; Glazewski J (2015) chapter 5.2.6.2.

⁸⁸ Barnard M (2012) 223.

⁸⁹ *BP Southern Africa*-case (2004) 218.

⁹⁰ *BP Southern Africa*-case (2004) 218.

balanced with the environmental impact of the development with due consideration of present and future generations.⁹¹

In *Fuel Retailers Association of Southern Africa v DG Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province and others*⁹² Ngcobo J emphasised the explicit recognition in s24(b)(iii) of the state's obligation to promote justifiable economic and social development.⁹³ He confirms the importance of development and explicitly links it to the negative right in s24(a) stating that it is 'essential to the well-being of humans'. By linking the duty contained in subsection 24(b)(iii) to subsection (a) in this manner, it could be argued that Ngcobo J regards 'well-being' in subsection 24(a) to include development that meets justifiable socio-economic development.⁹⁴ In this sense, it could be argued s24(a) can be interpreted that everyone has the right to an environment that is not harmful to justifiable socio-economic development.

Ngcobo J goes on to acknowledge the tension between development and the protection of the environment stating that this tension can be resolved within the framework of sustainable development which reconciles socio-economic development and environmental protection through the principle of integration.⁹⁵ Importantly, sustainable development does not envisage the cessation of socio-economic development; rather, it seeks to regulate the manner in which it should take place.⁹⁶ He further states that once it is accepted that socio-economic development and the environment is interlinked 'it follows that socio-economic conditions have an impact on the environment'.⁹⁷ Ngcobo J therefore concludes that all socio-economic developments impact on the environment and therefore that at all times the ideal of sustainable development is invoked. Sustainable development therefore always requires the integration of economic, social and environmental considerations.⁹⁸ Sachs J, in a minority judgment, differs with this conclusion. He states that sustainable development only presupposes accommodation, reconciliation *and in some instances* integration between

⁹¹ *BP Southern Africa*-case (2004) 219.

⁹² *Fuel Retailers Association of Southern Africa v DG Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province and others* 2007 (10) BCLR 1059 (CC).

⁹³ *Fuel Retailers*-case par 44.

⁹⁴ Du Plessis A (2008) pg 67 regards this statement by Ngcobo as 'embryonic' and criticizes him for not further elaborating on and unpacking the notion of 'well-being'.

⁹⁵ *Fuel Retailers*-case par 57.

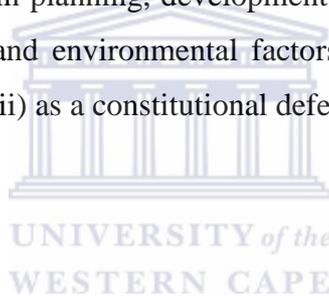
⁹⁶ *Fuel Retailers*-case par 57.

⁹⁷ *Fuel Retailers*-case par 71.

⁹⁸ *Fuel Retailers*-case par 45, 50, 61, 71.

economic and social development and environmental protection.⁹⁹ Sachs J focusses on economic sustainability and argues that, although it is not an independent factor to be evaluated in a discreet manner, it is an element that ‘only takes on significance to the extent that it impacts on the environment.’¹⁰⁰ Therefore, it will only become relevant to assess the environmental impact of economic development if the economic development potentially or actually impacts on the environment.¹⁰¹

The acknowledgement by Sachs J that sustainable development at the very least presupposes accommodation and reconciliation, if not integration, recognises that some sort of balancing of interests will have to occur to give effect to sustainable development. Where, in the balancing exercise, protection is afforded to economic or social objectives or outcomes at the expense of environmental considerations, s24(b)(iii) can be used as a shield. If a person’s rights are affected by a development or other activity and if there was insufficient integration of environmental considerations in planning, development or decision-making; or where the integration of economic, social and environmental factors was completely disregarded the person can rely on section 24(b)(iii) as a constitutional defence.¹⁰²



⁹⁹ *Fuel Retailers*-case 1099.

¹⁰⁰ *Fuel Retailers*-case 1099.

¹⁰¹ *Fuel Retailers*-case 1099; Feris L ‘Sustainable Development in Practice: Fuel Retailers Association of Southern Africa v DG Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province’ (2008) 1 *Constitutional Court Review* 236; Tladi D ‘Fuel Retailers, sustainable development & integration: A response to Feris’ (2008) 1 *Constitutional Court Review* 256. The minority judgement of Sachs has found more favorable endorsement by some academics. One of the criticisms levelled against the majority judgment is that it failed to give content to each of the three pillars of sustainable development, rather lumping them together and conflating, especially, economic and social considerations.

¹⁰² Du Plessis A (2008) 67.

2.2.2.2. South African legislation dealing with sustainable development

The NEMA is the framework legislation enacted to give effect to the environmental right. The NEMA embraces and incorporates the concept of sustainable development and defines it as ‘the integration of social, economic and environmental factors into planning, implementation and decision-making so as to ensure the development that serves present and future generations’.¹⁰³

The NEMA sets out certain principles in s2 (NEMA principles) which are applicable throughout the Republic to the actions of all organs of state that may significantly affect the environment.¹⁰⁴ The NEMA principles determine that environmental management must place people and their needs at the forefront of its concern¹⁰⁵ and must be based on sustainable development requiring development to be socially, environmentally and economically sustainable.¹⁰⁶

In subsection (4)(a) a *non numerous clausus* list¹⁰⁷ of factors are provided to guide the implementation of sustainable development.¹⁰⁸ Other NEMA principles which are not specifically identified as factors of sustainable development also reflect recurring elements of sustainable development identified by international law commentators and later recognised in the New Delhi Declaration.¹⁰⁹ These include, among others, the principles of environmental justice¹¹⁰ and equitable access to environmental resources and benefits,¹¹¹ the promotion of participation by interested and affected parties in environmental governance,¹¹² that decisions must take into account interests, needs and values of interested and affected parties,¹¹³ that

¹⁰³ s1 of the *NEMA*. The definition incorporates two internationally recognized elements of the concept of sustainable development, being the principle of integration and the principle of inter- and intra-generational equity. *Fuel Retailers*-case (2007) par 59.

¹⁰⁴ s2 of the *NEMA*.

¹⁰⁵ Section 2(2) of the *NEMA*.

¹⁰⁶ Section 2(3) of the *NEMA*.

¹⁰⁷ *Fuel Retailers*-case par 59.

¹⁰⁸ s2(4)(a)(i)-(viii) of the *NEMA*.

¹⁰⁹ It should be noted that the *New Delhi Declaration* was not yet in force at the time when the *NEMA* Principles were drafted. The *NEMA* Principles were drafted in 1997-1998 and the *New Delhi Declaration* was only concluded in 2002.

¹¹⁰ s2(4)(c) of the *NEMA*. This principle ties in with the *New Delhi Principle* of equity and the eradication of poverty. Sands P & Peel J (2012); *Fuel Retailers* – case par 51.

¹¹¹ s2(4)(d) of the *NEMA*. This principle ties in with the *New Delhi Principle* of equity and the eradication of poverty; Sands P & Peel J (2012); *Fuel Retailers* – case par 51.

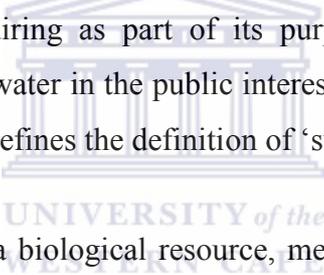
¹¹² s2(4)(f) of the *NEMA*. This principle reflects the *New Delhi Principle* of public participation and access to information and justice.

¹¹³ s2(4)(g) of the *NEMA*. This reflects the *New Delhi Principle* of public participation and access to information and justice.

decisions must be taken in an open and transparent manner and access to information must be given in accordance with law,¹¹⁴ and that there must be intergovernmental co-ordination of policies, legislation and actions relating to the environment.¹¹⁵

The NEMA principles must guide state organs in the exercise of their functions under NEMA and any other statute concerned with the protection of the environment¹¹⁶ and must be used in the administration, interpretation and implementation of NEMA and any other law concerned with the protection or management of the environment.¹¹⁷ The NEMA principles apply alongside, among others, the State's responsibility to respect, protect, promote and fulfil the social and economic rights in the Bill of Rights.¹¹⁸

Various sectoral pieces of legislation have incorporated the NEMA definition of sustainable development including the Mineral Petroleum and Resources Development Act (MPRDA),¹¹⁹ and the National Environmental Management: Waste Act.¹²⁰ The National Water Act¹²¹ alludes to sustainability by requiring as part of its purpose to 'promot(e) the efficient, sustainable and beneficial use of water in the public interest'.¹²² The National Environmental Management Biodiversity Act¹²³ refines the definition of 'sustainability' to mean:



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'in relation to the use of a biological resource, means the use of such resource in a way and at a rate that— (a) would not lead to its long-term decline; (b) would not disrupt the ecological integrity of the ecosystem in which it occurs; and (c) would ensure its continued use to meet the needs and aspirations of present and future generations of people'.¹²⁴

¹¹⁴ s2(4)(k) of the *NEMA*. This reflects the *New Delhi Principle* of public participation and access to information and justice.

¹¹⁵ s2(4)(l) of the *NEMA*. This reflects the *New Delhi Principle* of good governance and the principle of integration.

¹¹⁶ s2(1)(c) of the *NEMA*; *MEC for Agriculture, Conservation, Environment and Land Affairs v Sasol Oil (Pty) and another* [2006] 2 All SA 17 (SCA) par 15 where Cachalia JA emphasis the *NEMA*'s injunction that that the interpretation of any law concerned with the environment must be guided by the *NEMA* principle (hereinafter the *Sasol Oil-case*).

¹¹⁷ s2(1)(e) of the *NEMA*.

¹¹⁸ s2(1)(a) of the *NEMA*.

¹¹⁹ *MPRDA*.

¹²⁰ *NEM:WA*.

¹²¹ *NWA*.

¹²² s2 of the *NWA*.

¹²³ *NEM:BA*.

¹²⁴ s1 of *NEM:BA*.

The analysis of the environmental right and the NEMA principles confirm that sustainable development is central to the environmental right and environmental management in South Africa.¹²⁵ This is confirmed and supported by jurisprudence.¹²⁶ In light of the *Fuel Retailers* judgment, the requirement of integration of environmental, social and economic factors is the most important element of sustainable development.¹²⁷

2.3.THE REQUIREMENT THAT ENERGY MUST BE SUSTAINABLE

The critical role that energy plays in the fulfillment of the developmental objectives of the government has been recognized in the RDP¹²⁸ and the White Paper on Energy Policy.¹²⁹ Energy is essential for both social and economic development.¹³⁰ Economically energy is necessary for industry, commerce and mining,¹³¹ in turn providing employment and addressing social development objectives. Energy is necessary for meeting basic household needs such as cooking, heating of water and space, lighting and access to electronic media. Energy also supports productive activities such as informal home-based industries, and small scale agriculture. Additionally, energy provides infrastructural services to communities such as rural water supply, health care, education, lighting, etc.¹³²

However, it is widely accepted that the energy sector has a significant impact on the environment. The White Paper on Energy expressly notes that South Africa's energy sector causes significant negative environmental impacts; both from an individual human health perspective and environmental impacts on regional and global bases.¹³³ Electricity generated from conventional and renewable energy sources impact on the environment throughout the energy life cycle; however, in different ways and to various degrees. Most electricity

¹²⁵ Feris L (2008) 247.

¹²⁶ Ngcobo confirms this in *Fuel-Retailers* stating that considered in light of s24 of the *Constitution*, the *NEMA* requires the integration of environmental protection and economic and social development. *Fuel Retailers* (2007) par 61. Also confirmed in *BP Southern Africa-case* 218, stating that sustainable development is the fundamental building around which environmental legal norms are fashioned ... in South Africa, and is reflected in s24(b)(iii) of the *Constitution*.

¹²⁷ *Fuel Retailers-case* (2007) par 61. Also confirmed in *BP Southern Africa-case* 218.

¹²⁸ *Reconstruction and Development Programme* 71; *The New Growth Path* 27.

¹²⁹ *The White Paper on Energy Policy* 71.

¹³⁰ Barnard M (2014) 5 where she refers to *UN Report of the World Summit on Sustainable Development* (2002) A/CONF. 199/20 17.

¹³¹ *The White Paper on Energy Policy* 2, 30-5.

¹³² *The White Paper on Energy Policy* 30.

¹³³ *The White Paper on Energy Policy* 89.

produced from conventional sources of energy¹³⁴ is generated from finite natural resources, extracted through environmentally invasive mining operations. Electricity is then generated in power plants which result in various environmental impacts, including the release of atmospheric emissions, waste generation and water pollution.¹³⁵ Of greatest concern currently is electricity generated from coal which releases greenhouse gasses into the atmosphere, contributing to climate change.¹³⁶ South Africa in particular is heavily reliant on coal for the production of energy with approximately 77% of its primary energy needs being supplied by coal.¹³⁷ Approximately 90% of electricity is being generated by coal-fired power stations.¹³⁸ This is unlikely to change in the near future.¹³⁹

Electricity generated from modern renewable energy sources also impact on the environment where the construction of, for example, wind and solar farms, currently the dominate sources of renewable energy,¹⁴⁰ potentially impact on the environment from land-use planning, biodiversity, noise and visual impacts and cultural heritage perspectives.¹⁴¹ However, environmental impacts of electricity generated from renewable sources are far less than electricity generated from conventional sources such as coal. Firstly, the source of energy is renewable as opposed to the conventional sources which are generated from finite natural resources: renewable sources therefore fulfill the requirement of sustainable use of natural resources. Additionally, environmental impacts such as air and water pollution and waste resulting from the conversion of the renewable energy sources into electricity are far less than with, for example, generating electricity from coal where this form of electricity generation is, as mentioned, one of the main sources of greenhouse gas emissions resulting in climate change. Therefore, it is clear that the environmental impacts of renewable energy in comparison to conventional energy sources are far less in extent and duration.

¹³⁴ I use the conventional energy sources here to refer only to energy from coal, gas, nuclear, liquefied fuels and other fossil fuels and exclude energy from hydro.

¹³⁵ Wildermuth A (2011) 375-380. As the transmission and distribution of electricity from conventional and renewable sources to the national grid has similar environmental impacts, regulation of this part of the electricity sector will not be considered in this dissertation. The regulation of environmental impacts of electricity generation is discussed more fully in Chapter 3.

¹³⁶ Intergovernmental Panel on Climate Change *Fifth Assessment Report, Climate Change 2013: The Physical Science Basis, Summary for Policymakers* (2013) 4; *White Paper on Renewable Energy 3; Climate Change White Paper 8*.

¹³⁷ Department of Energy: *Coal Resources: Overview* at http://www.energy.gov.za/files/coal_frame.html (accessed 25 May 2016).

¹³⁸ Department of Energy: *Basic electricity: Overview* at http://www.energy.gov.za/files/electricity_frame.html (accessed 2 May 2016).

¹³⁹ Department of Energy: *Coal Resources: Overview* at http://www.energy.gov.za/files/coal_frame.html (accessed 25 May 2016).

¹⁴⁰ *State of Renewable Energy in South Africa* (2015) 78.

¹⁴¹ *EIA Guideline for RE Projects*.

Energy policy impacts on the competing interests of the government's objectives of social upliftment and economic growth and development on the one hand, and environmental sustainability on the other. Although the Constitution provides for certain fundamental social rights in the Bill of Rights in the form of the right to freedom of trade, occupation and profession,¹⁴² the right to property,¹⁴³ housing,¹⁴⁴ health care, food, water and social security,¹⁴⁵ rights of the child¹⁴⁶ and education¹⁴⁷, among others, there is no standalone fundamental right to social upliftment and or economic development. Rather, social upliftment and economic development are strategic imperatives in order to give effect to other fundamental rights guaranteed in the Constitution.

In contrast, the Constitution provides for the environmental right which is based on the concept of sustainable development. In light of this Constitutional imperative, it is clear that energy, while promoting justified social and economic development as provided for in government policy, should be ecologically sustainable and should secure sustainable use of natural resources. Therefore, energy planning must occur within the overarching framework of sustainable development in order to ensure it is constitutionally justifiable.

In order to ensure that energy planning with regards to electricity conforms to the ideal of sustainable development energy and electricity regulation itself must be sustainable. Relevant laws, regulations and policies, must therefore as a main objective give effect to 'sustainable energy'.¹⁴⁸

Currently, there is no binding definition of 'sustainable energy' in South African law or International Law. Although the link between energy and sustainable development in modern international law was at first not directly recognised, international environmental law principles nonetheless indirectly influenced energy policy¹⁴⁹ to the extent that more recent

¹⁴² s22 of the *Constitution*.

¹⁴³ s25 of the *Constitution*.

¹⁴⁴ s26 of the *Constitution*.

¹⁴⁵ s27 of the *Constitution*.

¹⁴⁶ s28 of the *Constitution*.

¹⁴⁷ s29 of the *Constitution*.

¹⁴⁸ Bruce S (2013) 14.

¹⁴⁹ Bruce S (2013) 12.

international law energy initiatives are directly informed by sustainable development imperatives incorporating environmental concerns.¹⁵⁰

At first, the social and economic value of renewable energy was recognised independently from international environmental law developments. At the UN Conference on New and Renewable Sources of Energy in 1981 an intergovernmental policy was adopted¹⁵¹ which laid the foundation for the establishment of the Committee on the Development and Utilisation of New and Renewable Sources of Energy later subsumed in the Commission on Sustainable Development (CSD).¹⁵² Over time, the CSD's mandate broadened to include energy.¹⁵³ In 2013 the CSD was replaced by the High-level Political Forum on Sustainable Development.

From an environmental perspective, the development of the concept of sustainable development indirectly, but quite influentially, impacted on the international energy policy discourse.¹⁵⁴ Although neither the Stockholm Declaration nor the Rio Declaration defines sustainable development, they do provide the contours of the concept.¹⁵⁵ These declarations also do not directly refer to energy; rather, energy policy is indirectly informed by requirements relating to, among others, unsustainable consumption patterns.¹⁵⁶ In the Brundlandt Report energy is indirectly linked with sustainable development where it is recognised that 'a safe, environmentally sound, and economically viable energy pathway ... will sustain human progress into the distant future...'¹⁵⁷

Energy policy was for the first time directly linked with energy security, climate change and sustainable energy at the 2002 WSSD.¹⁵⁸ Importantly, these links have also been

¹⁵⁰ United Nations General Assembly *International Year of Sustainable Energy for All* UN Doc A/RES/65/151, 2 para 1; Bruce S (2013) 16.

¹⁵¹ Bruce S (2013) 13; United Nations Conference on New and Renewable Sources of Energy *Report of the United Nations Conference on New and Renewable Sources of Energy* (1981) ch 1 ('*Nairobi Programme of Action*')

¹⁵² United Nations *Institutional Arrangements to Follow Up the United Nations Conference on Environment and Development* GA Res 47/191 UN GAOR 47th sess 93rd plen mtg Agenda Item 79 Supp No 49 UN Doc A/RES/47/191 (23 January 1992) 2 par 2.

¹⁵³ Bruce S (2013) 13 FN 77; *Report of the World Summit on Sustainable Development*, UN Doc A/CONF.199/20 (2002) ch1 p2.

¹⁵⁴ Bruce S (2013) 13.

¹⁵⁵ Bruce S (2013) 13.

¹⁵⁶ Bruce S (2013) 13. Bruce also notes that the *Stockholm Declaration* contains more specific provisions with regards to natural resources management than the *Rio Declarations* FN 79.

¹⁵⁷ *Brundlandt Report* par 65 and 116.

¹⁵⁸ Bruce S (2013) 13.

scientifically confirmed.¹⁵⁹ The JPOI, adopted at the WSSD, provides clear goals for states to develop and disseminate renewable energy as part of their energy mix and encourages substantial increases in renewable energy to happen with a sense of urgency.¹⁶⁰

Over the next decade, the urgency and need for transformation in the energy sector continued to gain traction with growing support for renewable energy technologies. In 2012 the UNGA declared the Year of International Sustainable Energy for All,¹⁶¹ which was followed up by a global challenge for SE4ALL: a bottom-up approach calling on various stakeholders to actively cooperate and contribute to the energy transformation.¹⁶² SE4ALL focusses on the following objectives to be reached by 2030: 1) to ensure universal access to modern energy services, 2) to double the global rate of improvement in energy efficiency and 3) to double the share of renewable energy in the global energy mix.¹⁶³ Sustainable energy can therefore be translated into three elements: access to modern energy, energy efficiency and renewable energy. From these elements it can be derived that renewable energy qualifies as a sustainable source of energy.

Sustainable energy from an international perspective was also considered by Barnard.¹⁶⁴ With specific regard to the Brundlandt definition of sustainable development, she argues that in order for an energy source to be considered sustainable it must be environmentally, economically and socially sound,¹⁶⁵ and conform to the principle of equity, while promoting the development of current and future generations. She further identifies the following factors in determining whether or not an energy source is sustainable: 1) global environmental challenges of energy-related climate change, and 2) cross-boundary and inter-generational impacts on vulnerable regions.¹⁶⁶ She concludes that ‘sustainable energy is energy that promotes sustainable development.’¹⁶⁷

¹⁵⁹ Bruce S (2013) 15, FN 89 where he refers to Arvizu D et al, ‘Technical Summary’ in Ottmar Edenhofer et al (eds) *Renewable Energy Sources and Climate Change Mitigation: Special Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press, 2012) 118-125.

¹⁶⁰ *Johannesburg Plan of Implementation* paras 20(c) and 20(e); Bruce S (2013) 15.

¹⁶¹ United Nations General Assembly *International Year of Sustainable Energy for All* UN Doc A/RES/65/151, 2 para 1. Bruce S (2013) 16.

¹⁶² The challenge is championed by the United Nations Secretary-General on request from the UNGA.

¹⁶³ United Nations Sustainable Energy for All: A vision statement by Ban Ki-moon, Secretary-General of the United Nations (United Nations, November 2011).

¹⁶⁴ Barnard M (2014).

¹⁶⁵ Barnard M (2014) 124.

¹⁶⁶ Barnard M (2014) 124.

¹⁶⁷ Barnard M (2014) 125.

From a South African perspective energy will be regarded as sustainable if it promotes sustainable development as defined in national legislation and interpreted in judicial precedent.¹⁶⁸ With regards to the elements of sustainable development offered in the environmental right and further elaborated on in the NEMA,¹⁶⁹ sustainable energy¹⁷⁰ will have to ensure 1) the integration of economic, social and environmental factors;¹⁷¹ 2) protection of the natural resource base for current and future generations;¹⁷² 3) that the exploitation of the natural resource base is done in a sustainable manner.¹⁷³

2.4.STATUS OF THE CONCEPT: SUSTAINABLE DEVELOPMENT

Before it can be assessed whether sustainable development has been given effect to in the legislative regime governing renewable energy to ensure sustainable energy it is necessary to understand how sustainable development is characterized and its status with regard to legal principles and rules.

It has been argued that sustainable development is neither a legal rule nor a legal principle, but rather an ideal.¹⁷⁴ Verschuuren distinguishes between ‘rules’, ‘principles’ and ‘ideals’ on the basis of Fuller’s argument that, in law, it is necessary to differentiate between morality of duty and morality of aspiration.¹⁷⁵ Verschuuren argues that ideals are an expression of morality of aspiration¹⁷⁶ setting a high moral standard for an entire world community to embrace.¹⁷⁷ In order to achieve this moral goal, legal principles must be developed to concretise the ideal which, in turn, will find application through enforceable legal rules, based on the morality of duty.¹⁷⁸ In this context, principles are the link between ideals and duties, or values and rules.¹⁷⁹ Although principles are not in themselves enforceable legal

¹⁶⁸ In accordance with Barnard’s interpretation of ‘sustainable energy’ in Barnard M (2014) 125; *Fuel Retailers – case* (2007) 57-62.

¹⁶⁹ Specifically referring to the definition of ‘sustainable development in section 1 and the factors listed which should be considered in giving effect to the requirement of sustainable development in section 2(4)(a) of the NEMA.

¹⁷⁰ In this thesis, where I use the terms sustainable energy, it will encapsulate renewable energy as the energy source which is a component of sustainable energy.

¹⁷¹ s1 of the NEMA. *Fuel Retailers* par 57-62.

¹⁷² s24(b) of the *Constitution*.

¹⁷³ s24(b) of the *Constitution*.

¹⁷⁴ Verschuuren J, ‘Sustainable development and the nature of environmental legal principles’ *PER* 2006(1).

¹⁷⁵ Verschuuren J, (2006) 4/57.

¹⁷⁶ Verschuuren J, (2006) 6/57.

¹⁷⁷ Verschuuren J, (2006) 13/57

¹⁷⁸ Verschuuren J, (2006) 13/57

¹⁷⁹ Verschuuren J, (2006) 13/57

duties, they are more concrete than values or ideals and serve to guide the interpretation of legal rules by bridging the gap between vague ideals or values, on the one hand, and rules or duties, on the other.¹⁸⁰

In order to determine whether a concept would qualify as an ideal, reference can be made to three elements extracted from the definition of ‘ideal’ as developed by Van den Burg.¹⁸¹ First, an ideal is a value and not a direct guide of action. Secondly, an ideal is future orientated, but also grounded in reality. Thirdly, an ideal is often vague and cannot be fully realised.¹⁸²

Applying these elements to sustainable development it is clear that it is future oriented with reference to intergenerational equity but also grounded in present reality through intragenerational equity. It is furthermore a vague and indeterminate goal.¹⁸³ With reference to the first element of Van den Burg’s definition it is true that sustainable development has been incorporated into many legal texts. However, it is argued that this does not necessarily detract from it qualifying as a value and not a norm, as the essential determinant factor is whether it is a direct guide of action, which it is clearly not.¹⁸⁴

Scholtz argues that sustainable development as referred to in South African legal instruments must also be regarded as an ideal and not a principle.¹⁸⁵ The fact that the legislature included sustainable development under s2 of the NEMA dealing with ‘principles’ should merely serve to emphasise the importance of the ideal, and that its inclusion is a mechanism to ensure the realisation of sustainable development as the ultimate goal. In this manner, the factors listed in s2 (4)(I)-(viii), should be regarded as principles in the manner discussed above: a medium which provides a link between the ideal of sustainable development and other legal duties.¹⁸⁶ The ‘factors’ listed in NEMA should serve as guideline and

¹⁸⁰ Verschuuren J, (2006) 13-14/57.

¹⁸¹ “... values that are implicit or latent in the law, or public moral culture of a society or group that usually cannot be fully materialized, and that partly transcends contingent, historical formulations, and implementations in terms of rule and principles”, Verschuuren J referencing Van den Burg 1997 *Journal of Value Inquiry* 25 at Verschuuren J 2006 6/57

¹⁸² Scholtz W ‘The anthropocentric approach to sustainable development in the National Environmental Management Act and the Constitution of South Africa’ *TSAR* (2005)1 77.

¹⁸³ Scholtz (2005) 77.

¹⁸⁴ Scholtz W (2005)-1 77

¹⁸⁵ Scholtz W (2005) 78.

¹⁸⁶ Scholtz W (2005)78

interpretational tool in giving content to the ideal of sustainable development in the NEMA and as required in s24 of the Constitution.

In the context of sustainable energy, specific legal rules should be developed setting out duties and obligations in order to ensure the realization of sustainable energy solutions giving effect to sustainable development. The application of these legal rules should be guided by legal principles. In this regard the factors listed in the NEMA principles to guide sustainable development will inform and link the legal rules in respect of sustainable energy to the achievement of the ideal of sustainable development.¹⁸⁷ However, additional legal principles should be developed with specific focus on guiding the implementation of sustainable energy solutions. In Chapter 3 of this dissertation, the legislative and regulatory regime of energy planning is considered with specific regard to whether these legal rules establish obligations and duties in furtherance of sustainable energy solutions to achieve sustainable development. It will further be assessed whether the NEMA principles together with other legal principles succeed in linking these legal rules with sustainable development.

2.5. CRITICISMS AGAINST SUSTAINABLE DEVELOPMENT

2.5.1. Sustainable development has not achieved synergy between environmental, economic and social concerns

Sustainable development as a concept has succeeded in marrying very different issues at a normative level.¹⁸⁸ However, it has been argued that it fails when it comes to implementation¹⁸⁹ with its initial strength becoming its main weakness.¹⁹⁰ The reason sustainable development is failing is because it encompasses divergent issues but fails to recognise the very real trade-offs that exist in pursuing environmental, social and development goals; it fails to provide meaningful and practical guidance as to how these trade-offs should be dealt with. Sustainable development therefore does not in practice result in synergy between environmental, social and developmental concerns.¹⁹¹ Instead, by introducing into policies and legal regulatory regimes predominantly concerned with

¹⁸⁷ S2(1)(a) and (e) of the *NEMA*.

¹⁸⁸ Viñuales (2013).

¹⁸⁹ Viñuales (2013) 5.

¹⁹⁰ Viñuales (2013) 7.

¹⁹¹ Viñuales (2013) 7.

economic and social development, environmental considerations under the concept of sustainable development, environmental issues are likened to an ‘immigrant’ in the land of development and growth.¹⁹² As such it will always have to align with the developmental agenda. In instances of conflict, developmental concerns will prevail and take preference.¹⁹³

In order to ensure sustainable energy, the energy legislative and regulatory regime must sufficiently incorporate and address environmental concerns, while promoting and securing economic development and social upliftment. Additionally, environmental concerns must be given due consideration: it must not be the case that it always plays second fiddle to economic- and socio- objectives. In order to achieve this, and given the characterisation of sustainable development as an ideal, clear legal rules must be established with regards to the incorporation of environmental concerns by means of specifying duties and obligations, and establishing practically achievable targets. Legal rules must clearly determine how trade-offs must be dealt with when energy objectives that are beneficial from an economic perspective, harms the environment. The legal rules must be informed by legal principles. Energy planning must be informed by the NEMA principles.¹⁹⁴ However, additional legal principles specific to sustainable energy solutions is necessary to guide how environmental concerns should be dealt with in an energy planning context. Initial guidance can be sought from Sustainable Development Goal 7¹⁹⁵ to ensure access to affordable, reliable, sustainable and modern energy for all which clearly acknowledges the link between the requirements of economic and environmental development.

2.5.2. Co-operative governance required for achievement of sustainable development

Given that different organs of state are mandated with energy and environmental management a certain level of fragmentation is inevitable. In order to ensure alignment of legislative outcomes, policies, programmes and plans holistic and integrated governance must be pursued with regards to the integration, or at the very least balancing, of economic, social and environmental concerns so as to ensure sustainable development is achieved.

¹⁹² Viñuales (2013) 8.

¹⁹³ Viñuales (2013) 8.

¹⁹⁴ s2 (1) (a) and (d) of the *NEMA*.

¹⁹⁵ General Assembly of United Nations *Resolution of 25 September 2015 A/RES/70/1*.

However, in addition to the fragmentation that occurs in the allocation of line functions to different organs of state, environmental management in South Africa is also marked with fragmentation.¹⁹⁶ This is due in part to the nature of environmental management which seeks to encompass a variety of issues including the protection of natural and cultural resources, pollution control and land use management.¹⁹⁷ Additionally, schedule 4 and 5 of the Constitution allocates exclusive and concurrent competencies to national and provincial spheres of government.¹⁹⁸ Schedule 4A lists functional areas of concurrent national and provincial legislative competence, while Schedule 5A lists exclusive provincial legislative competence including provincial planning. Schedule 4B and 5B sets out local government matters.

The Constitution determines in sections 40 and 41 that while national government is constituted by national, provincial and local spheres of government which are distinctive, interdependent and interrelated, they should observe and adhere to the principles of co-operative government and intergovernmental relation as specified in the performance of their functions.¹⁹⁹

It is argued that sustainable development as a goal will not be achieved if co-operative governance is not sufficiently regulated and enabled in respect of energy planning and its environmental impacts. Policies, programmes, processes and plans²⁰⁰ relating to energy planning and environmental management must be aligned in order to ensure environmental concerns are effectively taken into account together with developmental and social concerns. Where environmental concerns are not sufficiently incorporated into these activities, sustainable development will not be realised in practice.²⁰¹ Sustainable development, as a constitutional imperative, will not be achieved.

¹⁹⁶ Kotze L 'Improving unsustainable environmental governance in South Africa: the case for holistic governance' 1 (2006) *PER* 3-15.

¹⁹⁷ Kotze L (2006) 17.

¹⁹⁸ Schedule 4 and 5 of the *Constitution*.

¹⁹⁹ s41 of the *Constitution*.

²⁰⁰ 'Activities' is defined with regard to Chapter 5 of *NEMA* to mean 'policies, programmes, processes, plans and projects identified in terms of s24(2)(a) and (b)'.

²⁰¹ Vinuales JE (2013) 3.

With regards to environmental management, fragmentation occurs on a horizontal and vertical level, both from legislative and institutional perspective.²⁰² The environmental right and the environmental management law regime in general require sustainability.²⁰³ However, fragmentation results in a governance system that is the opposite of holistic and coordinated governance.²⁰⁴ As such the environmental governance system leads to unsustainable results with regards to efficient and adequate service delivery by organs of state tasked with environmental management.²⁰⁵ Unsustainable governance systems hamper the achievement of sustainable development as a constitutional imperative.

2.6. CONCLUSION

Sustainable development is a concept initially developed in international environmental law to facilitate the integration of environmental considerations in economic and social development planning so as to ensure the natural resource base is sufficient to cater for the needs of current generations and future generation. The concept was included in s24 of the Constitution and provides the basis for environmental law as developed in the constitutional dispensation through legislation and case law. Importantly, the environmental right explicitly recognises that while ecological sustainable development should be secured, just economic and social development must also be promoted through legislative and other measures. Just social and economic development has been interpreted to form an integral part of the right to have the environment protected so that it is not harmful to well-being.

In order to ensure energy planning complies with the environmental right, promoting justified social and economic development while ensuring ecologically sustainable and securing sustainable use of natural resources, it must occur within the overarching framework of sustainable development. Sustainable energy is energy that promotes sustainable development.²⁰⁶

Probably the most integral feature of sustainable development as interpreted in South African law is the requirement of integration of environmental and socio-economic factors.

²⁰² Kotze L (2006) 3-15.

²⁰³ Kotze L (2006) 2.

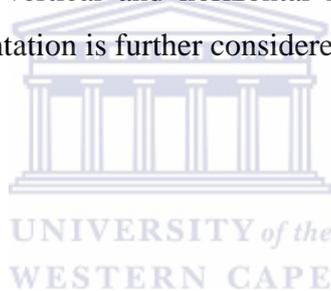
²⁰⁴ Kotze L (2006) 19.

²⁰⁵ Kotze L (2006) 19.

²⁰⁶ Barnard M (2014) 125.

Integration from an energy planning perspective must occur by means of clearly formulated legal rules guided by legal principles. If this does not happen, sustainable development may not be realised in practice as environmental concerns will not receive due consideration in a context where access to affordable energy are key government objectives. The question whether the energy law order and regulatory regime sufficiently provide for integration of environmental concerns, while promoting economic development and social upliftment is considered in Chapter 3.

Additionally, holistic, coordinated, integrated and cooperative governance is necessary for sustainable environmental governance of energy planning, and to ensure the achievement of sustainable development. However, fragmentation is first observed where different government departments are mandated with energy and environmental management. A second level of fragmentation occurs within environmental management, where fragmentation is observed on a vertical and horizontal level, and from a legislative and institutional perspective. Fragmentation is further considered in Chapter 4.



3. CHAPTER 3: ENERGY PLANNING: A LACK OF INCORPORATION OF ENVIRONMENTAL CONCERNS

3.1. INTRODUCTION

One of the main criticisms levelled against the ideal of sustainable development is that although on a normative level it succeeds to align seemingly contradictory goals of economic and social development, whilst ensuring that the environment is protected for current and future generations, in practice synergy between environmental, economic and social concerns are very rarely, if ever, achieved.²⁰⁷ Environmental concerns often feature as an ‘immigrant’ in government policies aimed at economic development or social upliftment, even in instances where these policies may have a significant detrimental impact on the environment. In order to ensure environmental concerns are sufficiently incorporated and given due consideration in these policies, the legislative regime governing energy regulation must clearly establish the legal rules setting out duties and obligations.²⁰⁸ These legal rules must be informed by clearly established and agreed legal principles. Sustainable energy must be guided by the NEMA principles.²⁰⁹ However, additional principles are arguably required in order to give more specific guidance to the formulation and application of legal rules applicable sustainable energy solutions. Legal rules and legal principles are required because sustainable development, and sustainable energy as a consequence, is characterized as an ideal.²¹⁰

This chapter critically assesses the energy regulatory regime and the legal rules and principles currently in force in order to determine whether environmental concerns are sufficiently incorporated with regards to legal rules and legal principles so as to ensure sustainable energy solutions are achieved. The chapter will focus on energy from coal as a source of conventional source of energy.

²⁰⁷ Vinuales (2013) 5.

²⁰⁸ Verschuuren J, (2006) (1) 13-14/57.

²⁰⁹ S4(1)(a) and (e) of the *NEMA*.

²¹⁰ Verschuuren J, (2006) (1) 13-14/57.

3.2.ENERGY WHITE PAPER

The Energy White Paper was published in December 1998, after the inclusion of the environmental right in the Constitution. The White Paper's discussion and formulation occurred more or less at the same time as the promulgation of the NEMA which was assented to on 19 November 1998 and commenced on 29 January 1999. The policy has not been updated since, despite drastic changes in the global energy sector, specifically with regards to the recent drop in oil prices, the global recession in 2008 and the increasing prominence and immediacy of climate change.

Although the Energy White Paper in an ad hoc and superficial manner refer to sustainable energy, impacts of energy on the environment, and sustainable development, it fails to link the requirement of sustainable energy production in order to achieve sustainable development,²¹¹ and to promote renewable energy as a source of sustainable energy.

The Energy White Paper does acknowledge the influence of energy on the environment, and identifies as a policy objective 'managing energy-related environmental and health impacts', specifically identifying as a Government commitment to ensure a balance between exploiting fossil fuels and maintenance of acceptable environmental requirements.²¹² Despite this acknowledgment, it is clear when considering the specific targets in respect of the short- and medium term objectives that economic growth and poverty eradication are the most pressing issues to be addressed.²¹³

The Energy White Paper acknowledges that 'renewable sources generally operate from an unlimited resource base and, as such, can increasingly contribute towards a long-term sustainable energy future'²¹⁴ and that 'renewable applications are in fact the least cost energy service; more so when social and environmental costs are taken into account'.²¹⁵ Yet no specific targets or objectives are established to achieve a greater contribution of renewable

²¹¹ Murombo T (2015) 13.

²¹² *The White Paper on Energy Policy* 9.

²¹³ *The White Paper on Energy Policy* 21.

²¹⁴ *The White Paper on Energy Policy* 79.

²¹⁵ *The White Paper on Energy Policy* 79.

energy. At most, Government sees renewable energy as responding to medium to long term objectives.²¹⁶

Importantly, the Energy White Paper notes that while other sources of energy may have a less detrimental impact on the environment it is unlikely that there would be a move away from energy from coal as a result of South Africa's abundant low-cost coal supply (in respect of which social and environmental costs are not taken into account).²¹⁷

3.3.RENEWABLE ENERGY WHITE PAPER

Responding to a growing momentum in the international sphere in respect of the requirement of sustainable development, specifically with regard to the WSSD and the resultant JPOI, the Department of Minerals and Energy (as it was then known) developed the Renewable Energy White Paper. The momentum internationally was mirrored locally where the environmental right started to gain practical relevance through the enactment of NEMA incorporating the NEMA principles, and judicial precedent²¹⁸ confirming that South African environmental law is based on the concept of sustainable development.²¹⁹

The Renewable Energy White Paper in its vision statement explicitly recognizes the link between modern renewable energy and the contribution it can make towards sustainable development providing:

“An energy economy in which modern renewable energy increases its share of energy consumed and provides affordable access to energy throughout South Africa, thus contributing to sustainable development and environmental conservation.”²²⁰

Further on it is emphasized that ‘renewable energy that is produced from sustainable natural sources will contribute to sustainable development’.²²¹ The Renewable Energy White Paper therefore implicitly recognizes that current energy planning, mainly reliant on low-cost coal,

²¹⁶ *The White Paper on Energy Policy* 79-82.

²¹⁷ *The White Paper on Energy Policy* 90.

²¹⁸ *BP Southern Africa - case* (2004) para 144A-144C.

²¹⁹ Glazewski J (2015) chapter 1.4; *BP Southern Africa-case* (2004) para 144A-144C; *Fuel Retailers-case* (2007) para 45 22B-22D.

²²⁰ *The White Paper on Renewable Energy* 1.

²²¹ *The White Paper on Renewable Energy* 26.

and policy, focusing on energy access and security, are not sufficient to ensure alignment with the duties contained in the environmental right, specifically with regard to the ideal of sustainable development.²²²

The Renewable Energy White Paper determines policy principles, identifies essential elements to support renewable energy implementation and proposes strategic goals, objectives and deliverables. Although acknowledging the environmental right as the basis for promoting renewable energy in support of sustainable development, the Renewable Energy White Paper does not specifically refer to the NEMA principles, rather establishing its own five principles. On critical examination of the principles, although they do not explicitly mirror the wording of recognized elements of sustainable development,²²³ it is possible to interpret these principles inclusively to support the ideal of sustainable development.

The first principle relates to full cost accounting which should include social, economic and environmental costs. Full cost accounting is important from a sustainable development perspective as it has been submitted that it relates to the principle of integration and to some extent the precautionary approach.²²⁴ Although the author agrees that it may relate to the principle of integration in the sense that when accounting for costs (including benefits) all three pillars of sustainable development should be accounted for, the author argues that the principles of integration in the true sense goes far wider than only requiring integration of costs and benefits. It should also include non-monetary social and environmental considerations in order to fulfill the right to an environment sufficient to support 'well-being',²²⁵ a concept which is not necessarily quantifiable. To do so would ignore the inherent value that certain environmental and social elements bring to ensure fulfillment of the environmental right.

Importantly, the Renewable Energy White Paper recognizes that lower costs associated with fossil fuel do not fully account for its adverse impact on the environment and society;²²⁶ this has resulted in the pricing determination of electricity generated from coal being hugely

²²² *The White Paper on Renewable Energy* 3; Murombo T (2015) 15.

²²³ See discussion in Chapter 1 on the elements of sustainable developments as proposed by Sands and in the *New Delhi Declaration*.

²²⁴ Barnard M (2012) 226.

²²⁵ s24(a) of the *Constitution*; *Fuel Retailers* (2007) par 44.

²²⁶ *The White Paper on Renewable Energy* 6; Murombo T (2015) 18.

discounted.²²⁷ As a consequence the Renewable Energy White Paper recognizes that if renewable energy is to be successfully implemented an enabling environment with regard to fiscal and financial support mechanisms and appropriate legal and regulatory framework will have to be established by Government.²²⁸

The second principle relates to equity, requiring equitable access to basic services to ensure the well-being of current generations without impairing the ability of future generations to ensure their well-being. This principle clearly references inter- and intragenerational equity which are well-established principles of sustainable development,²²⁹ also referenced in the environmental right. With regard to the electricity sector, it would mean that the current generation may make use of primary energy sources only to the extent that it does not impact on the ability of future generations to also use primary energy sources, especially with regard to non-renewable source.²³⁰

The last three principles are 1) global and international cooperation and responsibilities; 2) allocation of government functions within the framework of the Constitution; and 3) public participation. Although these principles are not specifically referred to as elements or factors of sustainable development, they are recognised in the NEMA principles.²³¹ These principles are also elements of sustainable development as identified in the New Delhi Declaration,²³² and are constitutionally endorsed rights.²³³

Significantly the Renewable Energy White Paper establishes a commitment by Government to achieve a 10 000 GWh contribution of renewable energy as part of the final energy consumption by 2013, to be produced by biomass, wind, solar and small-scale hydro. This would translate into approximately 4% of the estimated electricity demand.²³⁴ Unfortunately the Renewable Energy White Papers does not take the opportunity to highlight the need to

²²⁷ Murombo T (2015) 18, where he refers to extensive policy studies in FN 94.

²²⁸ *The White Paper on Renewable Energy* 27.

²²⁹ Murombo T (2015) 18; Barnard M (2012) 226.

²³⁰ Murombo T (2015) 17.

²³¹ s2(4)(n) of the *NEMA*.

²³² Barnard M (2012) 227. Barnard argues that the principle of global and international cooperation and responsibilities forms part of the element of common but differentiated responsibilities.

²³³ Public participation is endorsed by the Constitutional right to access to information in s32 and the right to just administrative action in s33. Legislative and executive functions are generally provided for in Chapters 5 and 7 of the *Constitution*.

²³⁴ *The White Paper on Renewable Energy* 26.

create an enabling framework to align regulatory fragmentation with regard to environmental matters, sustainable development, energy planning and climate change.²³⁵

At the time it was further envisaged that a National Energy Bill would be proposed that would create an enabling regulatory framework requiring the uptake of renewable energy as part of the national energy supply.²³⁶ Unfortunately, although the Bill made extensive provision for renewable energy, most of these provisions did not make it into the National Energy Act.²³⁷ Therefore, no legislative action has to date been taken in furtherance of the vision, goals and objectives set out in the Renewable Energy White Paper.

3.4.THE NATIONAL ENERGY ACT

The National Energy Act aimed to give effect to the Energy White Paper and the Renewable Energy White Paper. However, the final product fell significantly short in delivering on the objectives set in the Renewable Energy White Paper. While the National Energy Bill defined the meaning ‘sustainable’²³⁸ and ‘sustainable development’²³⁹ giving guidance to the interpretation of these concepts within the energy context, the National Energy Act contains no definitions for these terms. Also excluded from the National Energy Act is the mandated Renewable Energy Programme²⁴⁰ provided for in the National Energy Bill. The programme was required to actively promote renewable energy and optimize its contribution to the national energy supply, ultimately contributing to sustainable development.²⁴¹ The Bill further provides that within the context of the renewable energy programmes the Energy Minister must establish and maintain renewable energy capability within the Department of Energy (‘DoE’) and that he/she may publish renewable energy targets for the use of renewable energy, prescribe minimum contributions to the national energy supply including with regard to specific renewable energy technologies and sources.²⁴²

²³⁵ Murombo T (2015) 18.

²³⁶ *The White Paper on Renewable Energy* 9.

²³⁷ *National Energy Act* 34 of 2008 (the *National Energy Act*).

²³⁸ s1 of the *National Energy Bill* N 2151/2004 in GG 26848 8 October 2004 (hereinafter the *National Energy Bill*) defines ‘sustainable’ to mean ‘the use of natural resources for current needs that does not compromise the ability of future generations to meet their needs’.

²³⁹ s1 of the *National Energy Bill* defines ‘sustainable development’ as ‘development that satisfies current needs without endangering those of future generations’.

²⁴⁰ s17 of the *National Energy Bill*.

²⁴¹ a17(1) and (2) of the *National Energy Bill*.

²⁴² s17(3) of the *National Energy Bill*.

The National Energy Act includes as objectives the promotion in the diversity of supply of energy and its sources,²⁴³ to provide for certain safety, health and environmental matters pertaining to energy,²⁴⁴ and to contribute to sustainable development of the South African economy.²⁴⁵ Conspicuously absent from these objectives are the following objectives which were included in the National Energy Bill: to provide for the appropriate and sustainable development and use of energy sources for the benefit of all South Africans, to provide for the sustainable utilization of energy sources (which should include natural resources) and to provide for the development and introduction of renewable energy to achieve these objectives.²⁴⁶

The National Energy Act mainly provides for sustainable development as an ideal; it goes no further in giving content by means of legal principles²⁴⁷ and specific legal rules, setting targets and actions²⁴⁸. Furthermore, the National Energy Act fails to explicitly link renewable energy to sustainable development thereby failing to acknowledge that any promotion in the increase of renewable energy contribution to the energy supply would also contribute to South Africa's sustainable development objectives.

The National Energy Act mainly envisages that the integration of renewable energy into the national energy mix should occur within the context of integrated energy planning, a new planning framework aimed at informing energy policy and policy implementation.²⁴⁹ The National Energy Act, in chapter 3, determines that the Minister responsible for energy (Energy Minister) must develop an IEP which should be updated and reviewed annually.²⁵⁰ The IEP must have a long term planning horizon²⁵¹ and must guide energy infrastructure investment, taking into account all viable energy supply options. It must further guide the selection of appropriate technology to meet energy demand.²⁵²

²⁴³ s2(b) of the *National Energy Act*.

²⁴⁴ s2(h) of the *National Energy Act*.

²⁴⁵ s2(l) of the *National Energy Act*.

²⁴⁶ Glazewski J 'The Legal Framework for Renewable Energy in South Africa'

(http://www.un.org/esa/sustdev/sdissues/energy/op/parliamentarian_forum/glazewski_re_sa.pdf) (accessed on 25 May 2016).

²⁴⁷ Verschuuren J (2006) 13-14/57.

²⁴⁸ Murombo T (2015) 25.

²⁴⁹ s6 of the *National Energy Act*.

²⁵⁰ s6(1) of the *National Energy Act*.

²⁵¹ s6(5) of the *National Energy Act*.

²⁵² s6(6) of the *National Energy Act*.

The DoE published a draft integrated energy plan in 2012, which was updated in 2013. However, no final and binding IEP has yet been published. The Draft IEP (2013)'s purpose is to provide a roadmap of the future energy landscape in South Africa in order to guide future energy infrastructure investment and policy development.²⁵³ The draft does not specifically address the requirement of sustainable development but does refer, in the context of renewable energy, to the government's objective to develop the renewable energy industry in order to 'meet the long-term goal of a sustainable energy sector',²⁵⁴ envisaging that by 2030 renewable energy technologies would contribute 9% of the electricity supply.²⁵⁵

The only other mechanism created in the National Energy Act to promote renewable energy is in the section of the Act dealing with Minister's power to make regulations with regard to certain aspects which include regulations regarding minimum contributions from renewable energy to the national grid,²⁵⁶ the nature of the sources which may be used for renewable energy contributions to the national grid,²⁵⁷ and measures and incentives designed to promote the production, consumption investment, research and development of renewable energy.²⁵⁸ No regulations have to date been made by the Energy Minister with regard to this empowering provision.

The National Energy Act as framework legislation and the IEP as policy instrument have to date failed to actively promote and give guidance to the promotion of renewable energy as a means to contribute to sustainable development where no clear legal principles or legal rules are established. There is further a failure in the legislative regime to integrate and regulate environmental concerns, impacted by energy planning, with economic and social considerations. This is evident by the failure of the National Energy Act to acknowledge the link between renewable energy and sustainable development; to provide for minimum contributions of renewable energy as a source to the energy supply mix of South Africa; and to actively promote the development of renewable energy technology.²⁵⁹ Additionally, the provisions in the Act which could potentially be used to promote the implementation of renewable energy has to date not been utilized at all. It is therefore clear that empowering

²⁵³ Department of Energy *Draft 2012 Integrated Energy Planning Report* GN512 of GG 36690 (24 July 2013) (*Draft IEP (2013)*).

²⁵⁴ *Draft IEP (2013)* 66.

²⁵⁵ *Draft IEP (2013)* 73.

²⁵⁶ s19(d) of the *National Energy Act*.

²⁵⁷ s19(e) of the *National Energy Act*.

²⁵⁸ s19(f) of the *National Energy Act*.

²⁵⁹ Murombo T (2015) 25.

provisions may not be sufficient to encourage renewable energy up take: something more is required: for example, legislated renewable energy targets, or sustainable development targets supported by renewable energy technologies.

3.5.ELECTRICITY PLANNING

3.5.1. Electricity Regulation Act 4 of 2006

Electricity planning occurs within a regulatory framework established in terms of the Electricity Regulation Act 4 of 2006²⁶⁰ which was promulgated before the National Energy Act.

Electricity planning is required to be guided by the NEMA principles²⁶¹ requiring development to be socially, environmentally and economically sustainable.²⁶² The Electricity Regulation Act includes as an objective to ‘ensure that the interests and needs of present and future electricity customers and end users are safeguarded and met, having regard to the governance efficiency, effectiveness and long term sustainability of the electricity supply industry within the broader context of economic energy regulation in the Republic.’²⁶³ No explicit reference is made to the requirement that electricity regulation should be based on the requirement of sustainable development, sustainable use of natural resources, or the integration of environmental issues with economic and social developmental issues.

The Electricity Regulation Act establishes the National Energy Regulator of South Africa (NERSA) as the custodian and enforcer of the national electricity regulatory framework.²⁶⁴ NERSA is empowered, among others, to consider licence applications,²⁶⁵ to regulate prices and tariffs²⁶⁶ and to implement national policy, the integrated resource plan and the Act.²⁶⁷ Importantly, the NERSA is empowered to determine as licence conditions, the types of

²⁶⁰ *Electricity Regulation Act 4 of 2006.*

²⁶¹ s2(1)(e) of the *NEMA*.

²⁶² s2(3) of the *NEMA*.

²⁶³ s2(b) of the *Electricity Regulation Act*.

²⁶⁴ Preamble to the *Electricity Regulation Act*.

²⁶⁵ Licences must be obtained in respect of the operation of generation, transmission or distribution facilities; the import and export of electricity; and trading. s4(a) of the *Electricity Regulations Act*.

²⁶⁶ s4(a)(ii) of the *Electricity Regulation Act*.

²⁶⁷ s4(a)(iv) of the *Electricity Regulation Act*.

energy sources from which electricity must or may be generated, bought or sold²⁶⁸, and compliance with health, safety and environmental standards.²⁶⁹

The Act empowers the Energy Minister to determine, after consultation with NERSA, and by way of regulations²⁷⁰ new generation capacity in order to ensure security of supply.²⁷¹ As part of this power, the Energy Minister may also determine the types of energy sources from which electricity must be generated and the percentages of electricity that must be generated from such source. Importantly, no requirement as to the sustainability of the source is established.

The Electricity Regulations on New Generation Capacity²⁷² requires that the planning for new generation capacity must occur within the framework of an integrated resource plan to be developed by the Energy Minister in consultation with the NERSA.²⁷³ The Regulations requires that feasibility studies be undertaken in respect of new generation capacity, which must assess the affordability, risk allocation, value for money, material legal, financial and technical requirements and the appropriate generator.²⁷⁴ No specific requirement is included requiring the assessment of the environmental sustainability and feasibility of the proposed source for new generation capacity.

Ministerial determinations may only be made after the Energy Minister has considered the recommendations of the applicable feasibility study. The determination must determine who will establish the new generation, Eskom, another organ of state or an IPP, and the identity of the buyer or, where applicable, the procurer and the buyer.²⁷⁵

No specific requirement or objective is included in the Regulations with regard to renewable energy, sustainable development, sustainable use of natural resources or environmental impacts of determinations made of new generation capacity, specifically with regards to the energy source.

²⁶⁸ s14(1)(r) of the *Electricity Regulation Act*.

²⁶⁹ s14(1)(s) of the *Electricity Regulation Act*.

²⁷⁰ s35(4) of the *Electricity Regulations Act*.

²⁷¹ Section 34(1)(a) of the *Electricity Regulations Act*.

²⁷² Department of Energy *Electricity Regulations on New Generation Capacity* (GN 399 GG 34262 of 4 May 2011)

²⁷³ reg 4(1) of the *Electricity Regulations on New Generation Capacity*.

²⁷⁴ reg 5(1) and (2) of the *Electricity Regulations on New Generation Capacity*.

²⁷⁵ reg 6 of the *Electricity Regulations on New Generation Capacity*.

The integrated resource plan published in May 2011 lays out the proposed new generation for the period 2010-2030.²⁷⁶ The IRP 2010-2030 is an adjustment with regards to policy consideration of a proposed Revised Balance Scenario published in draft form by the DoE in June 2010.²⁷⁷ The IRP 2010-2030 calls for 42,6 GW of new generation capacity made up of 9,6GW of nuclear; 6,3 GW of coal; 17,8 GW of renewables; and 8,9 GW of other generation sources.²⁷⁸ The IRP2010-2030 notes that it was developed in consultation with other government departments.²⁷⁹ The outcome is based on a multi-criteria decision-making process representing a balance of different government objectives including economic growth, job creation, security of supply and sustainable development. However, it is clear that the key determinants of the outcome were security of supply and affordability.²⁸⁰ This is evident by the choice to commit to a full nuclear fleet of 9600 MW. The scenarios indicate that nuclear is not necessary to ensure future electricity demand is met, but that it would increase security of supply.²⁸¹ The IRP was updated in 2013; however, the updated plan was not officially adopted as government policy.²⁸² The IRP 2013 does not make any significant changes to the planned renewable energy capacity, recommending the continued roll out of the renewable bid programme with additional annual rounds of 1000 MW PV capacity, 1000 MW wind capacity and 200 MW CSP capacities, also exploring the potential of small hydro and land-fill gas technologies.²⁸³

3.5.2. Independent Power Purchase Procurement Programme

In answer to the 2008 electricity shortages and urgent need for electricity generation capacity, the potential importance of independent power producer (IPP) in producing new electricity capacity, as originally recognised in the Energy White Paper,²⁸⁴ received renewed attention. The DoE and National Treasury entered into a memorandum of agreement with the

²⁷⁶ Department of Energy *Electricity Regulations on the Integrated Resource Plan 2010-2030* GN 400 GG 34263 of 6 May 2011 (hereinafter the *IRP 2010-2030*).

²⁷⁷ Department of Energy *Draft Integrated Resource Plan for Electricity 2010 (Revision 2) (the draft IRP 2010)*. The *draft IRP 2010* envisaged a nuclear fleet of 9,6 GW; 6,3 GW of coal; 11,4 GW of renewables; and 10 GW of other generation sources.

²⁷⁸ *IRP 2010-2030* 6.

²⁷⁹ *IRP 2010-2030* 7.

²⁸⁰ *IRP 2010-2030* 13.

²⁸¹ *IRP 2010-2030* 11.

²⁸² Department of Energy *Integrated Resource Plan 2010-2030 Update Report (2013) (IRP 2013)*.

²⁸³ *IRP 2013* 52.

²⁸⁴ *The White Paper on Energy* 55.

Development Bank of South Africa in order to enable the DoE to establish the Independent Power Producer Procurement Programme (IPPPP) as primary vehicle to facilitate the uptake of energy production by IPP. The IPPPP included a renewable energy component known as the Renewable Energy Independent Power Purchase Procurement Programme (REIPPPP, or REI4P).²⁸⁵

Under the REI4P and in accordance with powers granted under the Electricity Regulators Act and the Electricity Regulations on New Generation Capacity, the Energy Minister has made various determinations for new generation capacity to be sourced from renewable energy technologies.²⁸⁶ Four bid rounds under REIPPPP have already been completed during which 92 IPPs secured contracts for the supply of renewable energy to the electricity grid with a total nameplate capacity of 6,327 MW.²⁸⁷ Probably the most important arrangement under the REIPPPP is the directive for ESKOM to enter into power purchase agreements (PPA) with IPPs selected as preferred bidders, securing an off-take for renewable energy for a period of 20 years.²⁸⁸

The REIPPPP has gained international recognition and the 2014 UNEP Report placed South Africa among the top 10 countries with regard to renewable energy investment.²⁸⁹

However, the REIPPPP forms part of a bigger drive by government to decentralize and diversify South Africa's energy mix in order to ensure security of supply and access to energy for purposes of giving effect to the government's development objectives.²⁹⁰ Towards this end the Energy Minister also made determinations for the procurement of coal,²⁹¹

²⁸⁵ *State of Renewable Energy Report (2015)* 67.

²⁸⁶ GN 1074 GG 36005 19 December 2012. With 1470 MW to be sourced from onshore wind, 400 MW from concentrated solar power, 1075 MW from solar photovoltaic, 60 MW small hydro, 47,5 MW biomass, 47,5 MW biogas and 100 MW for other small projects. An additional amount of 2609 MW was determined in respect of hydro in GN 1075 GG 36005 of 19 December 2012; GN 733 GG 39111 of 18 August 2015. With 3040 MW to be sourced from onshore wind, 600 MW from concentrated solar power, 2200 MW from solar photovoltaic, 60 MW small hydro, 130 MW biomass, 50 MW biogas and 200 MW for other small projects.

²⁸⁷ *State of Renewable Energy Report* 5.

²⁸⁸ *State of Renewable Energy Report* 67.

²⁸⁹ *State of Renewable Energy Report* 4.

²⁹⁰ *State of Renewable Energy Report* 67. The Report states that the IPPPP 'has attempted to find an effective balance between the seemingly competing national goals of accelerated procurement of cost-effective energy at the required scale, while enabling and leveraging maximized development benefits for the country'.

²⁹¹ GN 1075 GG 36005 19 December 2012. The Energy Minister, in consultation with NERSA, made a determination in terms of section 34(1) of the *Electricity Regulations Act* for the procurement of 2500 MW base load energy to be generated from coal. GN 454 GG 39940 20 April 2016. The Energy Minister, in consultation with NERSA, made a determination in terms of section 34(1) of the *Electricity Regulations Act* for the procurement of 3750 MW to be generated from coal, from cross border projects.

nuclear,²⁹² and gas²⁹³ under the auspices of the IPPPP. The development of the IPPPP came at a time when South Africa experienced a significant disconnect between supply and demand resulting in rolling blackouts posing serious threats to the South African economy. Blackouts persisted well into 2015, demonstrating the lack of proper planning for electricity demand and new generation capacity prior to the development of the IPPPP.²⁹⁴

The current electricity regulatory regime does facilitate and have successfully enabled the diversification of the energy supply mix to include renewable energy technologies. However, this has not occurred within a framework which recognises the inherent importance of sustainable energy as a means of giving effect to sustainable development in compliance with the environmental right.²⁹⁵

Although the objective of sustainable development appears to guide the implementation of electricity planning as required in the NEMA principles, the Act and Regulations do not give any specificity as to how sustainable energy should be achieved in practical terms. This is illustrated by the following: first, no specific requirement is established in respect of license applications that the environmental impacts of the source of energy must be taken into account. Although NERSA can act proactively in terms of imposing a condition regarding the type of energy sources from which electricity may or may not be bought or sold,²⁹⁶ there is no legal obligation on him/her to promote sustainable energy solutions.²⁹⁷ Once the license is granted NERSA is empowered to impose a condition that the license holder must comply with environmental safety and health standards.²⁹⁸ Furthermore, NERSA is constrained by national electricity planning which occur within the framework of the IRP 2010, and ministerial determinations in respect of new generation capacity.²⁹⁹ Secondly, the IPPP programme which also gave impetus to the REIPPPP was developed by government not as a

²⁹² GN 1268 GG 39541 21 December 2015. The Energy Minister, in consultation with NERSA, made a determination in terms of section 34(1) of the *Electricity Regulations Act* for the procurement of 9800 MW nuclear energy by means of an IPPPP.

²⁹³ GN 732 GG 39111 18 August 2015. The Energy Minister, in consultation with NERSA, made a determination in terms of section 34(1) of the *Electricity Regulations Act* for the procurement of 3126 MW energy which may be generated from any gas type or source including natural gas delivered to the power generation facility by pipeline from a natural gas field or an LNG based method; coal bed methane; synthesis gas or syngas; above or underground coal gasification; Shale Gas and any other gas type or source as may be considered appropriate by the procurer under an IPP.

²⁹⁴ Murombo T (2015) 27.

²⁹⁵ Murombo T (2015) 27.

²⁹⁶ s(1)(r) of the *Electricity Regulation Act*.

²⁹⁷ Murombo T (2015) 28.

²⁹⁸ s14(s) of the *Electricity Regulation Act*; Murombo T (2015) 28.

²⁹⁹ s(1) of the *Electricity Regulations Act*.

drive towards clean, sustainable energy solutions, but rather to address a shortage in electricity, impacting on economic sustainability. The vulnerability of the continued success of the REIPPPP programme where it is not implemented with the main objective of providing sustainable energy solutions is illustrated by the recent letter by Eskom to the Energy Minister indicating that the utility was unwilling to sign further power purchase agreements beyond the latest bid window of the REIPPPP.³⁰⁰

From this it is clear that the electricity supply regime's main focus is on security of supply and access to energy in order to ensure the economic and social development objectives of government are realized. The environmental pillar of sustainable development is currently far less important than the economic and social pillars. To use the words of Viñuales: '(I)t is an immigrant in the land of development'.³⁰¹ Therefore, current electricity planning does not sufficiently integrate the three pillars, as required by sustainable development, envisaged in the environmental right. Sustainable development is not implemented by the electricity regulatory regime.³⁰²

3.6.CONCLUSION



The energy and electricity legislative and regulatory regime fails to sufficiently incorporate environmental concerns, while clearly promoting economic and social government goals. In order to ensure the continued increase in investment and support for renewable energy technologies as a means to accomplish a sustainable energy solution for South Africa, it is imperative that the energy and electricity legislative and regulatory regime incorporate specific legal duties with regards to obligations to achieve sustainable energy solutions and targets in respect of renewable energy. Trade-offs arising from pursuing developmental objectives while addressing environmental concerns must be clearly regulated in order to ensure environmental concerns are not an inferior 'immigrant' in the energy landscape.³⁰³ The link between sustainable energy solutions and legal duties must be informed by legal principles. NEMA principles must guide energy planning. Additional legal principles are necessary to specifically guide the implementation of sustainable energy solutions.

³⁰⁰ Paton C 'Eskom cuts off private power' <http://www.bdlive.co.za/business/energy/2016/07/21/eskom-cuts-off-private-power> (accessed on 28 July 2016)

³⁰¹ Viñuales (2013) 8.

³⁰² Viñuales (2013) 8.

³⁰³ Viñuales (2013) 8.



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4. CHAPTER 4: FRAGMENTARY GOVERNANCE OF ENVIRONMENTAL IMPACTS OF ENERGY

4.1. INTRODUCTION

Sustainable development requires the integration of environmental, economic and social factors. However, a certain level of fragmentation is inevitable. The first level of fragmentation results from different organs of state being mandated to establish and realise environmental, economic and social objectives and outcomes, respectively. The second level of fragmentation results from the nature of environmental management, which seeks to encompass a variety of issues which include protection of natural and cultural resources, pollution control and land use management.³⁰⁴ This is exacerbated by schedule 4 and 5 of the Constitution which allocates exclusive and concurrent competencies to national and provincial spheres of government.³⁰⁵ Schedule 4A lists functional areas of concurrent national and provincial legislative competence, while Schedule 5A lists exclusive provincial legislative competence including provincial planning. Schedule 4B and 5B sets out local government matters. Fragmentation is the opposite of holistic, coordinated, integrated and cooperative governance.³⁰⁶ This may lead to unsustainable results with regards to management of environmental impacts occasioned by the energy sector.³⁰⁷

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In order to understand the extent of fragmentation that exist with regard to the management of environmental impacts of energy, it is necessary to consider the various levels of fragmentation, what mechanisms are created to address the fragmentation and whether these mechanisms have been successful in overcoming fragmentation to the extent that unsustainable governance is addressed.

³⁰⁴ Kotze L (2006) 17.

³⁰⁵ Schedule 4 and 5 of the *Constitution*.

³⁰⁶ Kotze L (2006) 19.

³⁰⁷ Kotze L (2006) 19.

4.2. LEVEL ONE FRAGMENTATION: ENVIRONMENTAL MANAGEMENT VS ENERGY PLANNING

4.2.1. Policies, plans and programmes

The most obvious and crucial fragmentation is the fact that different governmental line functions are mandated with energy planning and environmental management.³⁰⁸ The mandate of the DoE is to ensure secure and sustainable provision of energy for socio-economic development.³⁰⁹ The DEA's mandate is to 'give effect to the right of citizens to an environment that is not harmful to their health or wellbeing, and to have the environment protected for the benefit of present and future generations.'³¹⁰ The DEA aims to achieve this by providing leadership in environmental management, conservation and protection towards sustainability for the benefit of South Africans and the global community. It has been argued that the DEA and the DoE only recently acknowledged the common objective of ensuring sustainable use of natural resources.³¹¹

The fragmentation should be addressed by giving effect to sustainable development by integrating the need for social and economic development, ensured by effective energy planning, with environmental management. A mechanism created to ensure sustainable development is achieved is co-operative governance. The Constitution determines in sections 40 and 41 that while national government is constituted by national, provincial and local spheres of government which are distinctive, interdependent and interrelated, they should observe and adhere to the principles of co-operative government and intergovernmental relation as specified³¹² in the performance of their functions. Alignment and integration must be achieved in respect of assessing the environmental impact of specific energy developments, as well as in respect of policies, programmes, processes and plans, in line with

³⁰⁸ Murombo T (2015) 5-6.

³⁰⁹ Department of Energy website: *Overview/ About us* http://www.energy.gov.za/files/au_frame.html (accessed 14 August 2016.)

³¹⁰ Department of Environmental Affairs website: *About us/Department* <https://www.environment.gov.za/aboutus/department#mandate> (accessed 16 August 2016).

³¹¹ Murombo T (2015) 5.

³¹² s41 of the *Constitution*.

the definition of ‘activities’ in the NEMA.³¹³ It is argued that sustainable development as a goal will not be achieved if co-operative governance is not sufficiently regulated and enabled.

Given that the DEA has the principle mandate to ensure environmental management and sustainable development is achieved, it is necessary to consider whether the mechanism created in environmental legislation and regulation aiming to give effect to cooperative governance succeeds in bridging the seemingly divergent mandates of the DoE and the DEA.

In terms of section 11 of the NEMA certain national and provincial state departments listed in schedules to the NEMA are required to prepare environmental implementation plans (EIP) or environmental management plans (EMP), depending on which schedule the department is listed.³¹⁴ EIPs must be prepared by state departments exercising functions which may affect the environment,³¹⁵ while EMPs must be prepared by state departments exercising functions which involve the management of the environment.³¹⁶ The NEMA determines that the content and ambit of EMPs must be more comprehensive and detailed than EIPs.³¹⁷ Most state departments involved in the energy supply chain are listed in schedule 2 requiring them to prepare EMPs. These departments include the DEA, the DWA, DMR and DoE.

The purpose of the plans include to give effect to the principles of co-operative governance and to enable the Environment Minister to monitor the achievement of a sustainable environment.³¹⁸ EMPs must contain descriptions of the functions exercised by such department in respect of, among others, the environment; environmental norms and standards adopted; compliance of other organs of state with that organ’s policies, plans and programmes; and proposals for the promotion of objectives and plans for the implementation of procedures and regulations referred to in respect of Chapter 5 of the NEMA regarding IEM.³¹⁹ EMPs must be submitted to the Environment Minister for approval.³²⁰ Importantly, the NEMA does not specify what should happen in the event that the Environment Minister refuses to approve an EMP only stating that the national department who submitted an EMP

³¹³ ‘Activities’ is defined with regard to Chapter 5 of *NEMA* to mean ‘policies, programmes, processes, plans and projects identified in terms of s24(2)(a) and (b)’.

³¹⁴ Section 11 of the *NEMA*.

³¹⁵ Schedule 1 to the *NEMA*.

³¹⁶ Schedule 2 to the *NEMA*.

³¹⁷ Compare section 13 of the *NEMA* to section 14 of the *NEMA*.

³¹⁸ Section 12(b) and (f) of the *NEMA*.

³¹⁹ Section 14 of the *NEMA*.

³²⁰ Section 15(1) of the *NEMA*.

must adopt and publish its plan in the Government Gazette within 90 days of submission, not approval. The EMP becomes effective on the date of publication.

Before the NEMA was amended by the National Environmental Laws Amendment Act (NEMLA)³²¹ the NEMA provided that an EMP must first be submitted to the Committee for Environmental Co-ordination³²² for approval. The Committee could then either recommend the EMP for approval or report to the Environment Minister and every other Minister represented on the Committee on the extent to which an EMP or EIP did not comply with, among other things, the NEMA principles.³²³ This provision ensured that EMPs aligned to the NEMA principles, including those related to sustainable development. In the NEMLA the empowering provision establishing the Committee for Environmental Co-ordination was repealed.³²⁴

The committee's main objective included to inform the Environment Minister of the views of stake-holders regarding the application of the NEMA principles and to advise the Environment Minister on matters concerning environmental management and governance; and appropriate methods of monitoring compliance with the NEMA principles. The Committee for Environmental Co-ordination therefore played a central role in coordinating co-operative governance in order to facilitate the achievement of sustainable development.

The repeal of the institutional oversight by the Committee for Environmental Co-ordination generally, and of EMPs more specifically, has diluted the effectiveness of EMPs to facilitate co-operative governance in management of the environment also undermining the goal of sustainable development. This is because the NEMA as it currently reads provides no oversight of EMPs to ensure that it aligns with the NEMA principles and sustainable development. As an afterthought, the NEMA does require compliance with an EMP once it has been adopted and that any substantial deviation from an adopted EMP must be reported to the Director General of Environmental Affairs (Environment DG).³²⁵

³²¹ *National Environmental Laws Amendment Act* 14 of 2009 (hereinafter the *NEMLA*).

³²² Established in terms of section 7 of the *NEMA* which has been repealed by section 5 of *NEMLA*.

³²³ Repealed section 15(2) of the *NEMA*.

³²⁴ Established in terms of section 7 of the *NEMA* which has been repealed by section 5 of *NEMLA*.

³²⁵ Section 16(1) of the *NEMA*.

SEMAs also provide for the development of various frameworks, management plans and programmes and policies by national, provincial and local government aimed at aligning functions and providing information on the state of the environmental medium being reported on. Additionally, SEMAs provide for various government departments and organs of state to prepare reports which must be incorporated into EIPs or EMPs in respect of national and provincial departments, and IDPs in respect of Municipalities. These reports provide high-level strategic information about the state of the environmental medium.³²⁶

For Renewable Energy projects these frameworks, management plans and programmes and policies are relevant from a high-level strategic point of view as decision-makers must take these into account as relevant factors when taking decisions in respect of EAs.³²⁷

IEPs and EMP are aimed at informing the DEA regarding long-term goals and objectives of state departments which impact, to various degrees, on the environment. As can be seen from recent amendments to the NEMA discussed above, the potential effectiveness of the requirement to prepare these IEPs and EMPs is watered down significantly: In terms of NEMA, DEA is merely a by-stander with little power to require amendment or reconsideration where a plan impacts on the environment. It may choose not to accept the EIP/EMP, but there are no provisions in NEMA dealing with the consequence of the DEA refusing to accept it.³²⁸ The only powers afforded by the NEMA are to ensure compliance with the IEP and/or EMP.

³²⁶ S7 of *NEM:AQA* empowers the Environment Minister to establish a national framework for purposes of achieving the objects of the *NEM:AQA* and section 15 of *NEM:AQA* requires national and provincial departments to incorporate an air quality management plan (AQMP) into EIPs and EMPs that must be prepared under the NEMA and Municipalities must include an AQMP in its integrated development plan as contemplated in Chapter 5 of the *Local Government: Municipal Systems Act*; s6 of the *NEM:WA* requires the Environment Minister to establish the national waste management strategy in order to achieve the objects of the *NEM:WA* and s11 determines that provincial departments responsible for waste management and each municipality to prepare integrated waste management plans; s5 of *NWA* requires the Water Minister to establish a national water resource strategy; s38 of the *NEM:BA* requires the Environment Minister prepare a national biodiversity framework; s 44, 46 and 48 of *NEM:ICMA* requires the preparation of national, provincial, and municipal coastal management programmes.

³²⁷ Section 24O(1)(b)(viii) of the NEMA.

³²⁸ Resolution of conflict will have to be resolved by means of procures established in the *Intergovernmental Relations Framework Act* 13 of 2005.

4.2.2. Energy projects

The NEMA provides for co-operative governance in integrated environmental management (IEM), and the environmental impact assessment (EIA) process aimed at assessing the environmental impacts of a specific development. Co-operative governance provisions in the NEMA relating to IEM include 1) requiring organs of state that also regulate aspects related to an activity requiring EA to participate in the public participation process;³²⁹ 2) requiring coordination and cooperation by organs of state in respect of requirements to obtain EAs under different acts;³³⁰ 3) empowering integrated authorisation;³³¹ and 4) empowering agreements to be reached to facilitate EIA procedures and to avoid duplication.³³²

An example of cooperative governance between state departments in respect of the EA process is the ‘one environmental system’ for the environmental management of mining. The one environmental system has its origins in a political agreement between the Ministers responsible for environmental affairs and mineral resources and was brought about by a series of amendments to the NEMA,³³³ the MPRDA,³³⁴ the NEM:WA³³⁵ and the NWA.³³⁶ The purpose of these amendments includes aligning the environmental management of mining activities with the IEM system created under the NEMA. According to the one environmental system EAs in respect of activities directly related to mining are now regulated under the NEMA and waste management licences under the NEM:WA. Previously these were regulated in terms of the MPRDA. However, the Minerals Minister remains the competent authority for considering the EA and waste management licences for mining and related activities. The Environment Minister is the appeal authority and responsible for determining the regulatory framework and applicable norms and standards.³³⁷ Lastly, the amendments aim to streamline the processes for issuing of permits, licences and authorisation so as to ensure completion within a period of 300 days.³³⁸

³²⁹ s24(4)(a)(v) of the *NEMA* read with regulation 19, 21 and 23 of the *EIA Regulations*.

³³⁰ s24(4)(a)(i) of the *NEMA*.

³³¹ s24L of the *NEMA*.

³³² s24K of the *NEMA*.

³³³ *National Environmental Management Amendment Act 62 of 2008* and the *National Environmental Management Laws Amendment Act 25 of 2014*.

³³⁴ *MPRDA* and the *Mineral and Petroleum Resources Development Amendment Act 49 of 2008*.

³³⁵ *NEM:WA* and the *NEMLAA*.

³³⁶ *NWA* and the *National Water Amendment Act 27 of 2014*.

³³⁷ s24(9) of the *NEMA* read with definition of ‘minister’ in s1 of *NEMA* and s43(1A) of the *NEMA*.

³³⁸ For a detailed discussion on the one environmental system see Humby T “One environmental system”: aligning the laws on the environmental management of mining in South Africa.’ *Journal of Energy & Natural Resources Law* Vol 15, No 2, 110-130.

To date, no similar agreements have been reached in respect of the pursuit of sustainable energy solutions. It is argued that similar agreements can and should be reached between organs of state in respect of renewable energy projects in order to streamline the EA processes under the NEMA, SEMAs and authorisation processes under other relevant laws including land use planning laws. This will create a more holistic, integrated and coordinated governance approach which may lead to more sustainable results with regard to sustainable energy and renewable energy projects.

4.3. LEVEL TWO FRAGMENTATION: INTEGRATED ENVIRONMENTAL MANAGEMENT

At a secondary level, fragmentation is observed within environmental management. In respect of the EIA process, fragmentation exists on an institutional³³⁹ and legislative level.³⁴⁰ Vertical institutional fragmentation exists where both the Environment Minister and the Executive Council of a province who is responsible for environmental affairs ('Environment MEC') have administrative powers and duties under the NEMA, for example in relation to considering EA applications.³⁴¹ Horizontal institutional fragmentation is created by the provision empowering the Mining Minister to consider and decide on EA in respect of activities directly related to mining activities.³⁴² Vertical legislative fragmentation occurs where both the Environment Minister and the Environment MEC are empowered to make lists of activities and prescribe norms and standards.³⁴³

Fragmented environmental governance is not focused on renewable energy projects alone: it is a common feature of the environmental management.³⁴⁴ The fragmentation is further exacerbated by the Constitutional emphasis on distinctive government spheres,³⁴⁵ and the allocation of competencies in Schedules 4 and 5 of the Constitution. Fragmented environmental governance is contrary to the integrated, inter-related conception of the

³³⁹ Kotze LJ 'Improving unsustainable environmental governance in South Africa' *PER* 2006(1) 3-15.

³⁴⁰ Kotze LJ (2006) 3-15.

³⁴¹ s24C(1) and (2) of the *NEMA*; Kotze LJ (2006) 3.

³⁴² s24C(2A) of the *NEMA*; Kotze LJ (2006) 3.

³⁴³ s24(2) of the *NEMA*; Kotze LJ (2006) 3-10.

³⁴⁴ s40 of the Constitution; Kotze LJ (2006) 17; Glazewski *Environmental Law in South Africa* 2ed (2005) 108.

³⁴⁵ Craigie et al 'Environmental Compliance' in *Environmental Compliance and Enforcement in South Africa: Legal Perspectives* (2009) 5.

environment³⁴⁶ and may result in unsustainable results,³⁴⁷ undermining the realisation of the sustainable development and adherence to the environmental right. As such environmental law can be seen as an obstacle to enable sustainable energy solutions in furthering the ideal of sustainable development.

Fragmentation within the IEM level will now be considered with regard to various environmental authorisations which may be required for by renewable energy projects.

4.4.NEMA: ENVIRONMENTAL AUTHORISATIONS

Section 24 of the NEMA deals with the process to obtain EA to legally commence with certain identified activities. This section has been extensively amended since the NEMA was originally promulgated³⁴⁸ and provides detailed provisions in relation to the EIA process required to obtain EA. EIAs are designed to assess environmental impacts in respect of specific projects and developments.³⁴⁹

The purpose of an EIA is to consider, investigate, assess and report on the potential consequences for or impacts on the environment of listed³⁵⁰ and specified³⁵¹ activities.³⁵² Activities are identified either on the basis that the activity itself may potentially negatively impact on the environment or on the basis that the geographical area in which the activity is planned has specific environmental attributes that should be protected, for example nature reserves. The former type of activity is referred to as listed activities and the latter as specified activities. The Environment Minister and the Environment MEC with concurrence from the Environment Minister are empowered to identify listed and specified activities.³⁵³ Where an activity falls within the jurisdiction of another minister or MEC the Environment Minister or Environment MEC, as the case may be, must consult with the other minister or

³⁴⁶ Refer to the definition of 'environment' in s1 of the *NEMA*; Kotze LJ (2006) 19.

³⁴⁷ Kotze LJ (2006) 19.

³⁴⁸ This section has been amended by the following acts: *National Environmental Management Amendment Act*, No. 8 of 2004; *National Environment Management Amendment Act*, No. 62 of 2008; *National Environmental Management Laws Second Amendment Act*, No. 30 of 2013; *National Environmental Management Laws Amendment Act*, No. 25 of 2014; Glazewski (2015) ch10.3.2.4.

³⁴⁹ Glazewski (2015) ch10.3.1.

³⁵⁰ 'Listed activity' when used in Ch5 of the *NEMA* means an activity identified in terms of s24(2)(a) and (d), s1 of the *NEMA*.

³⁵¹ 'Specified activity' when used in Ch5 of the *NEMA* means an activity as specified in terms of s24(2)(b) and (c), s1 of the *NEMA*.

³⁵² s24(1) of the *NEMA*.

³⁵³ s24(2) of the *NEMA*.

MEC.³⁵⁴ A person may not commence with a listed or specified activity without EA³⁵⁵ from a competent authority ('CA').³⁵⁶

NEMA stipulates that the EIA process must ensure that the general objectives of the IEM and the NEMA principles are taken into account in any decisions in respect of an activity. It must facilitate coordination and cooperation between organs of state in the consideration of assessments where an activity falls under the jurisdiction of more than one organ of state and³⁵⁷ must include an investigation and assessment of the potential consequences or impacts of the activity on the environment.³⁵⁸ Alternatives must also be considered, including the option of not implementing the activity.³⁵⁹ The EIA must investigate possible mitigation measures³⁶⁰ and must report on gaps in knowledge and uncertainties.³⁶¹ Provision must further be made to monitor environmental impacts over the lifetime of the project.³⁶² Decision-makers in respect of applications for EA are required to consider applicable environmental management frameworks (EMFs) and adhere to requirements prescribed in relevant SEMAs.³⁶³

The Environment Minister has published the Environmental Impact Assessment Regulations (EIA Regulations)³⁶⁴ and national lists of listed and specified activities in 2006³⁶⁵, 2010³⁶⁶ and most recently in 2014;³⁶⁷ each time repealing the previous regulation and lists. Listing

³⁵⁴ s24(2) of the *NEMA*.

³⁵⁵ 'Environmental authorization' means 'the authorization by a competent authority of a listed or specified activity in terms of this Act, and includes a similar authorization contemplated in a specific environmental management Act', s of the *NEMA*.

³⁵⁶ s24F of the *NEMA*.

³⁵⁷ s24(4)(a) of the *NEMA*.

³⁵⁸ s24(4)(a)(iv) of the *NEMA*.

³⁵⁹ s24(4)(b)(i) of the *NEMA*.

³⁶⁰ s24(4)(b)(ii) of the *NEMA*.

³⁶¹ s24(4)(b)(iv) of the *NEMA*.

³⁶² s24(4)(b)(v) of the *NEMA*.

³⁶³ s24(4)(b)(vi) and (vii) of the *NEMA*.

³⁶⁴ Regulations in terms of Chapter 5 of the *National Environmental Management Act*, 1998 (GN 385 GG 28753 of 21 April 2006); repealed by *Environmental Impact Assessment Regulations* (GN 543 GG 33306 of 18 June 2010); repealed by *Environmental Impact Assessment Regulations* (GNR 982 GG 38282 of 4 December 2014).

³⁶⁵ *List of Activities and Competent Authorities identified in terms of sections 24 and 24D of The National Environmental Management Act*, 1998 (GN 386 and GN 387 in GG 28753 of 21 April 2006).

³⁶⁶ *Listing Notice 1: List of Activities and Competent Authorities identified in terms of sections 24(2) and 24D* (GN 544 GG 33306 of 18 June 2010), *National Environmental Management Act (107/1998): Listing Notice 2: List of Activities and Competent Authorities identified in terms of sections 24(2) and 24D* (GN 545 GG 33306 of 18 June 2010); *National Environmental Management Act (107/1998): Listing Notice 3: List of Activities and Competent Authorities identified in terms of sections 24(2) and 24D* (GN 546 GG 33306 of 18 June 2010).

³⁶⁷ *National Environmental Management Act (107/1998): Listing Notice 1: List of Activities and Competent Authorities identified in terms of sections 24(2) and 24D* (GNR 983 GG 38282 of 4 December 2014), *Listing Notice 2: List of Activities and Competent Authorities identified in terms of sections 24(2) and 24D* (GN 984 GG 38282 of 4 December 2014); *National Environmental Management Act (107/1998): Listing Notice 3: List of Activities and Competent Authorities identified in terms of sections 24(2) and 24D* (GN 985 GG 38282 of 4

Notices 1 and 2 relate to activities which must be assessed with regard to the listed activity's potential negative impact on the environment. Listing Notice 3 provides for specified activities with regards to geographical areas, demarcated according to provincial borders. The consequence of an activity being listed or specified in a listing notice is that prescribed EIA procedures in respect of the activity must be undertaken in accordance with the EIA Regulations. The Listing Notices also identify the CA,³⁶⁸ being the organ of state responsible for evaluating the environmental impact of an activity and taking decisions in respect of applications for EA in respect of such activity.³⁶⁹ In most instances it will be the Environment MEC, except in respect of activities identified in s24C(2) of the NEMA in which case the Environment Minister will be the CA and in respect of activities directly relating to mining operations, in which case the Mining Minister will be the CA.³⁷⁰

For activities listed in Listing Notice 1 and 3, a shorter basic assessment process must be undertaken within specified timeframes in accordance with regulations 19 of the EIA Regulations.³⁷¹ The EIA process provides for compulsory public participation; comments from interested and affected parties and relevant state organs must be incorporated and addressed in the final basic assessment report.³⁷² The basic assessment report must contain all the information identified in Appendix 1 to the EIA Regulations.

For activities listed in Listing Notice 2 a more comprehensive, two-stage assessment process must be undertaken called the scoping and environmental impact assessment (S&EIA) process. First, a scoping assessment must be undertaken within prescribed time periods.³⁷³ The objective of the scoping process is to motivate the need and desirability of the proposed activity and to identify the key issues that must be addressed in the EIA phase.³⁷⁴ The scoping report must be subjected to public participation and must incorporate the comments from interested and affected parties and competent authorities in the final scoping report.³⁷⁵ On acceptance of the scoping report by the CA, the applicant must undertake the comprehensive

December 2014 (referred to as *Listing Notice 1*, *Listing Notice 2* and *Listing Notice 3*, respectively, or together referred to as *Listing Notices*).

³⁶⁸ s24C(1) of the *NEMA*.

³⁶⁹ Definition of 'competent authority' in s1 of the *NEMA*.

³⁷⁰ s24C(2A) of the *NEMA*.

³⁷¹ *EIA Regulations*.

³⁷² Basic assessment report must contain all the information identified in Appendix 1 of the *EIA Regulations*.

³⁷³ reg 21 of the *EIA Regulations*.

³⁷⁴ Appendix 2, paragraph 1 of the *EIA Regulations*.

³⁷⁵ The scoping report must contain all the information as required in Appendix 2 of the *EIA Regulations*.

EIA in line with the approved plan of study.³⁷⁶ Again, the EIA report must be subjected to a public participation process and the comments of interested and affected parties and relevant organs of state must be incorporated and addressed. The final basic assessment report and the final EIA Report must include relevant specialist reports,³⁷⁷ an Environmental Management Programme (EMPr),³⁷⁸ and where applicable a closure plan.³⁷⁹

If a development triggers more than one activity, a single application must be submitted to the CA covering all the activities triggered by the development.³⁸⁰ If at least one of the activities require the S&EIA process to be followed, only the more comprehensive S&EIA process must be followed in respect of all the activities triggered.³⁸¹ The EIA Regulations provides that a CA may grant permission for combination of applications³⁸² where proponents of a development intend to undertake one or more than one activity of the same type at different locations within the area of jurisdiction of a CA,³⁸³ or where a proponent intends to undertake interrelated activities at the same or different locations within the area of jurisdiction of a CA.³⁸⁴

A renewable energy project may trigger a number of listed and specified activities. The Environment Minister has published the EIA Guideline for Renewable Energy Projects³⁸⁵ to provide guidance on the environmental management legal framework applicable to renewable energy projects by identifying activities which require authorization before a proponent of a renewable energy project may commence with the activity under the NEMA, SEMAs and related legislation. The Guideline includes an indicative list of activities under the NEMA Listing Notices which may be triggered by various renewable energy projects.³⁸⁶

In addition to the requirement to obtain EA under the NEMA, a renewable energy project may also trigger requirements to obtain EAs under other SEMAs which will be discussed in detail below. NEMA attempts to align EA processes by empowering a CA identified in

³⁷⁶ Appendix 3 read with s1(1) of the *EIA Regulations*.

³⁷⁷ reg 19 and 23 and Appendix 6 of the *EIA Regulations*.

³⁷⁸ reg 19 and 23 and Appendix 4 of the *EIA Regulations*.

³⁷⁹ reg 19 read with Appendix 5 of the *EIA Regulations*.

³⁸⁰ reg 11 of the *EIA Regulations*.

³⁸¹ reg 19(3) of the *EIA Regulations*.

³⁸² reg 11 of the *EIA Regulations*.

³⁸³ reg 11(1) and (2) of the *EIA Regulations*.

³⁸⁴ reg 11(4) of the *EIA Regulations*.

³⁸⁵ *EIA Guideline for RE Projects*.

³⁸⁶ *EIA Guideline for RE Projects* 31-50.

Chapter 5 of NEMA to enter into an agreement with another authority empowered under a SEMA to issue an integrated EA.³⁸⁷ An integrated EA may only be issued if all the relevant provisions in NEMA and the relevant SEMA have been complied with and the EA specifies the provisions in terms of which it has been issued and the relevant authority/ies that have issued it.³⁸⁸ If a CA under NEMA is also empowered under a SEMA to grant an EA in respect of the same activity, the CA may regard the authorization under NEMA as sufficient for purposes the SEMA.³⁸⁹ Likewise, where an authorization granted under any other legislation meets all the requirements stipulated in NEMA³⁹⁰ the CA may regard such authorization as an EA for purposes of NEMA. Additionally, the NEMA empowers the Environment Minister or Environment MEC to conclude an agreement aimed at avoiding duplication in the submission of information or processes with any organ of state responsible for administering legislation relating to the activity that requires EA under the NEMA, which agreement must be taken into account when considering applications for EA.³⁹¹

4.4.1. Critical assessment

In respect of the EIA process under NEMA, fragmentation exists on an institutional³⁹² and legislative level.³⁹³ Vertical institutional fragmentation exists where both the Environment Minister and the Environment MEC have administrative powers and duties under the NEMA, for example in relation to considering EA applications.³⁹⁴ Horizontal institutional fragmentation is created by the provision empowering the Mining Minister to consider and decide on EA in respect of activities directly related to mining activities.³⁹⁵ Vertical legislative fragmentation occurs where both the Environment Minister and the Environment MEC are empowered to make lists of activities and prescribe norms and standards.³⁹⁶

³⁸⁷ s24L of the *NEMA*.

³⁸⁸ s24L(2) of the *NEMA*.

³⁸⁹ s24L(3) of the *NEMA*.

³⁹⁰ s24(4)(a) and, where applicable s24(4)(b) of the *NEMA*.

³⁹¹ s24K(1)(2) and (3) of the *NEMA*.

³⁹² Kotze LJ 'Improving unsustainable environmental governance in South Africa' *PER* 2006(1) 3-15.

³⁹³ Kotze LJ (2006) 3-15.

³⁹⁴ s24C(1) and (2) of the *NEMA*; Kotze LJ (2006) 3.

³⁹⁵ s24C(2A) of the *NEMA*; Kotze LJ (2006) 3.

³⁹⁶ s24(2) of the *NEMA*; Kotze LJ (2006) 3-10.

4.5. NATIONAL ENVIRONMENTAL MANAGEMENT: AIR QUALITY ACT

4.5.1. Environmental authorisation

Air pollution is listed in Part B of Schedule 4 of the Constitution and as such Municipalities have executive authority in relation to air pollution and the right to administer and make by-laws for the effective administration of air quality management.³⁹⁷ Despite this fact, air quality management is primarily regulated under NEM:AQA. By-laws do play an important supplementary role. NEM:AQA will most likely be applicable to the following renewable energy technologies: wind energy,³⁹⁸ biomass³⁹⁹ and energy from waste.⁴⁰⁰

Section 21(1) of NEM:AQA, empowers the Environment Minister or Environment MEC to publish and amend a list of activities which result in atmospheric emissions and which it reasonably believes have or may have a significant detrimental effect on the environment.⁴⁰¹

Section 21(2) of NEM:AQA provides that a list published by an Environment MEC only applies to the relevant province while one published by the Environment Minister applies nationally.⁴⁰² The notice must establish minimum emission standards in respect of substances or mixtures of substances resulting from a listed activity.⁴⁰³

The Environment Minister published the listed activities and associated minimum emission standards identified in terms of section 21 of NEM:AQA on 22 November 2013.⁴⁰⁴ Of the renewable energy technologies currently being employed, energy from biomass will trigger Category 1.3 Solid Biomass Combustion Installation.⁴⁰⁵ Additionally category 8.1 relating to the thermal treatment of hazardous and general waste may also be triggered, especially for renewable energy technologies relating to energy from waste.⁴⁰⁶

³⁹⁷ Part B of Schedule 4 of the *Constitution*.

³⁹⁸ *EIA Guideline for RE Projects* 7.

³⁹⁹ *EIA Guideline for RE Projects* 11.

⁴⁰⁰ *EIA Guideline for RE Projects* 22-23.

⁴⁰¹ s21 of the *NEMA*.

⁴⁰² s21(2) of the *NEM:AQA*.

⁴⁰³ s21(3)(a) of the *NEM:AQA*.

⁴⁰⁴ List of Activities which result in atmospheric emissions which have or may have a significant detrimental effect on the environment, including health, social conditions, economic conditions, ecological conditions or cultural heritage (GN 893 GG 37054 22 November 2011).

⁴⁰⁵ *EIA Guideline for RE Projects* 54-55.

⁴⁰⁶ *EIA Guideline for RE Projects* 54-55.

A person conducting an activity identified in a listing notice is required to obtain an atmospheric emission licence ('AEL'). NEMA:AQA prohibits a person from conducting an activity listed in a national list or a provincial list before obtaining a provisional atmospheric licence.⁴⁰⁷ Additionally minimum emission standards as stipulated in the AEL Notice must be complied with.

Metropolitan and district municipalities are principally responsible for implementing the AEL system.⁴⁰⁸ Where a municipality lacks capacity, it may delegate its function of licensing authority to the provincial organ of state in terms of s238 the Constitution.⁴⁰⁹ In respect of AEL applications made by a municipality, the Environment MEC is identified as the licensing authority.⁴¹⁰ An Environment MEC is further empowered to intervene in terms of s139 of the Constitution if the municipality is not fulfilling its duties as a licensing authority.⁴¹¹

All AEL applications must comply with the EIA procedures stipulated in s24 of NEMA and the EIA Regulations and an EA must be obtained for the activities listed in Listing Notices 1, 2 and 3. Activities which may be triggered include commencing with the expansion of, or changes to, existing facilities which will trigger the need for an AEL;⁴¹² the development of facilities or infrastructure for any process or activity that requires an AEL;⁴¹³ and an activity which requires an AEL except where such commencement requires a basic assessment in terms of the 2014 EIA Regulations.⁴¹⁴

Applications for EA⁴¹⁵ under NEMA and NEM:AQA must be made to different authorities; the provisions of NEM:AQA aim to streamline these processes. First an application for EA under the NEMA must be made to the CA identified in the applicable EIA Regulation Listing Notice;⁴¹⁶ in most instances the CA will be the Environment MEC. Once an EA has been

⁴⁰⁷ s22 of the *NEMA*.

⁴⁰⁸ s36 of the *NEM:AQA*.

⁴⁰⁹ s36(2) of *NEM:AQA*.

⁴¹⁰ s36(4) of *NEM:AQA*.

⁴¹¹ s36(3) of *NEM:AQA*.

⁴¹² Item 34 in *Listing Notice 1*.

⁴¹³ Item 6 in *Listing Notice 2*.

⁴¹⁴ Item 28 in *Listing Notice 2*.

⁴¹⁵ See Footnote 355.

⁴¹⁶ Listing Notices.

granted, the AEL licensing authority must make a decision on the AEL application within 60 days of the decision to issue an EA under the NEMA.⁴¹⁷

4.5.2. Critical assessment

From the above it is clear that the AEL licencing procedure is complex and fragmented. From a vertical structural point⁴¹⁸ of view the NEMA:AQA places duties on the DEA, provincial environmental departments and local authorities which must, depending on the empowering provision, be implemented and enforced separately or jointly.⁴¹⁹ From a legislative point of view fragmentation occurs firstly vertically, where, both the National Minister and the Environment MEC are empowered to publish lists of activities⁴²⁰ requiring an AEL.⁴²¹ Additionally, local authorities have the right to administer and make by-laws in respect of air pollution in terms of Part B of Schedule 4 of the Constitution. Secondly, legislative fragmentation occurs horizontally⁴²² with two authorisation processes running concurrently being the EIA under the NEMA and the AEL under NEM:AQA with different CAs taking decisions in respect of each application. In instances where a local authority has delegated the power to issue AEL applications to the provincial environmental office, the decision-maker in respect of both the EA and the AEL will be the Environment MEC.⁴²³

The NEM:AQA requires that the principle of cooperative governance provided for in the NEMA principles be applied.⁴²⁴ So, for instance the AEL licensing authority should work with the CA responsible for issuing EA under NEMA during the EIA process in order to ensure alignment and avoidance of duplication in respect of decisions and conditions which may be imposed respect of the EAs under NEMA and NEM:AQA.

⁴¹⁷ s40(3) of *NEM:AQA*.

⁴¹⁸ Kotze LJ (2006) 3.

⁴¹⁹ Examples: 1) section 21 of *NEM:AQA* empowers both the Environment Minister and the Environment MEC to publish lists of activities requiring an AEL; 2) section 36 of the *NEM:AQA* empowers local authorities to enforce AEL systems which can in certain circumstance be delegated to the Environment MEC where the local authority does not have the capacity.

⁴²⁰ s21 of the *NEM:AQA*. Kotze LJ (2006) 3-4.

⁴²¹ s18, 19, 23 and 29 of *NEM:AQA*.

⁴²² Kotze LJ (2006) 4-10.

⁴²³ s36(2) of *NEM:AQA*.

⁴²⁴ s5(2) of the *NEM:AQA*.

4.6. NATIONAL ENVIRONMENTAL MANAGEMENT: WASTE ACT

4.6.1. Environmental authorisations

In terms of Schedule 4, Part A of the Constitution both ‘environment’ and ‘pollution control’ are concurrent national and provincial government competencies. In addition, Schedule 5, Part B municipalities have competence in respect of ‘refuse removal, refuse dumps and solid waste disposal’.⁴²⁵ Accordingly, all spheres of government are responsible for waste. The primary law regulating waste management in South Africa is the NEM:WA which covers a broad range of activities, including the generation, recovery, re-use, recycling, storage, treatment, transport, disposal, import and export of various types of waste. For purposes of renewable energy, NEM:WA will most likely be applicable to the following renewable energy technologies: biomass,⁴²⁶ solar⁴²⁷ and energy from waste.⁴²⁸

The NEM:WA empowers the Environment Minister and Environment MEC to publish a list of waste management activities that have, or are likely to have, a detrimental effect on the environment.⁴²⁹ A list published by the Environment Minister applies nationally, while a list published by the Environment MEC will only apply to that particular province.⁴³⁰ A person who conducts a listed waste management activity must obtain a waste management licence, or must comply with specified norms and standards.⁴³¹ No person may commence, undertake or conduct a waste management activity, unless they hold a waste management licence for that activity, or comply with the published norms and standards.⁴³²

The Environment Minister published a list of waste management activities (Listed Waste Management Activities)⁴³³ which relate to various activities including storage, recycling or recovery, treatment, and disposal of hazardous and general waste; and the construction, expansion and decommissioning of facilities for any of the above.

⁴²⁵ Schedule 5, Part B of the *Constitution*.

⁴²⁶ *EIA Guideline for RE Projects* (2015) 11.

⁴²⁷ *EIA Guideline for RE Projects* (2015) 17.

⁴²⁸ *EIA Guideline for RE Projects* (2015) 22-23.

⁴²⁹ s19 of the *NEM:WA*.

⁴³⁰ s19(7) of the *NEM:WA*.

⁴³¹ s19(3) of the *NEM:WA*.

⁴³² s20 the *NEM:WA*.

⁴³³ *List of waste management activities that have, or are likely to have, a detrimental effect on the environment* (GN 921 GG 37083 of 29 November 2013).

The Listed Waste Management Activities are divided into three categories. Category A and B require waste management licences while Category C activities must only comply with norms and standards as determined by the Minister.⁴³⁴ Additionally, a person who wishes to conduct a Category A or B activity must apply for an EA under NEMA: in respect of Category A activities the basic assessment process must be followed;⁴³⁵ for Category B activities the S&EIR process must be followed.⁴³⁶

The licencing authority will in most instances be the Environment MEC,⁴³⁷ except in certain specified instances when the Environment Minister will be the licencing authority.⁴³⁸ In giving effect to the one environmental system, the NEM:WA was amended⁴³⁹ to provide that the Mining Minister is the licencing authority where the waste management activity is directly related to prospecting, exploration, extraction and primary processing of a mineral or petroleum resource; or residue deposits and residue stockpiles from a prospecting, mining, exploration or production operation.⁴⁴⁰

Section 44 of the NEM:WA requires that the licensing authority must as far as practicable aim to give effect to co-operative governance by co-ordinating or consolidating decision-making processes under the NEM:WA with decision-making processes provided for in Chapter 5 of the NEMA and other legislation, such as SEMAs.⁴⁴¹ This is enabled by empowering the licensing authority to issue an integrated licence jointly with other organs of state empowered to take decisions under applicable legislation, which licence will give approval under the NEM:WA and the other relevant legislation specified in the licence.⁴⁴² Alternatively, a consolidated process can be followed where the waste management licence is issued as part of a consolidated authorisation consisting of separate but mutually consistent authorisations, each issued under a different statute by the relevant CA.⁴⁴³

⁴³⁴ *The national norms and standards identified in the List of waste management activities are: 1. National norms and standards for the storage of waste (GN 926 of GG 37083 29 November 2013); 2. National standards for the extraction, flaring or recovery of landfill gas (GN 924 GG 37083 of 29 November 2013); 3. National standards for the scrapping or recovery of motor vehicles (GN 925 GG 37083 of 29 November 2013).*

⁴³⁵ Paragraph 3 of the *List of waste management activities*.

⁴³⁶ Paragraph 4 of the *List of waste management activities*.

⁴³⁷ s43(2) of the *NEM:WA*.

⁴³⁸ s43(1) of the *NEM:WA*.

⁴³⁹ s21 of *NEMLA Act 25 of 2014*.

⁴⁴⁰ s43(1A) of the *NEM:WA*.

⁴⁴¹ s44(1) of the *NEM:WA*.

⁴⁴² s44(2)(a) of the *NEM:WA*.

⁴⁴³ s44(2)(b) of the *NEM:WA*.

NEM:WA further empowers the Environment Minister to restrict the granting of waste management licences in a specified geographical area for a specified period and on such terms and conditions as the Environment Minister may determine for purposes of environmental protection, conservation of resources, sustainable development, or human health and well-being.⁴⁴⁴ No such geographical areas have been declared to date.

4.6.2. Critical assessment

As with NEM:AQA environmental management under the NEM:WA is complex and fragmented. From a structural point of fragmentation occurs vertically where both the Environment Minister and the Environment MEC have administrative functions and duties under the NE:WA, including as CA in respect of waste management licence applications.⁴⁴⁵ Structural Fragmentation also occurs horizontally where the Department of Mineral Resources ('DMR') has the power to take decisions in respect applications for waste management activities directly relating to mining.⁴⁴⁶

Legislative fragmentation occurs vertically, where, both the Environment Minister and the Environment MEC are empowered to publish lists of activities requiring waste management licences. Sectoral horizontal fragmentation occurs where two authorisation processes are running concurrently, being the EIA under the NEMA and the waste management licence under NEM:WA. In most instances the CA will be the same in respect of the EA and the waste management licence, and the CA can utilise the empowerment to issue integrated EA in order to streamline the process and to avoid duplication.

Additionally, inter-sectoral fragmentation occurs in respect of the regulation of waste management where numerous other pieces of national legislation also deal with waste including, with regard to the marine environment, NEM:ICMA,⁴⁴⁷ the National Ports Act⁴⁴⁸ and the Marine Pollution (Prevention of Pollution from Ships) Act 2 of 1996;⁴⁴⁹ with regard to waste water or water containing waste the NWA, the WSA; and with regard to the

⁴⁴⁴ s20A of *NEM:WA*.

⁴⁴⁵ s43(1) and (2) of the *NEM:WA*.

⁴⁴⁶ s43(1A) of the *NEM:WA*.

⁴⁴⁷ *NEM:ICMA* deals with, among other matters, dumping at sea under s70 and 71 and discharges into coastal waters under section 69.

⁴⁴⁸ *National Ports Act* 12 of 2005.

⁴⁴⁹ *Marine Pollution (Prevention of Pollution from Ships) Act* 2 of 1996 regulates, among other matters, discharges from vessels.

construction of waste water infrastructure requires an environmental authorisation under NEMA. Provincial legislation has also been promulgated but these acts are not directly relevant to renewable energy.⁴⁵⁰

4.7. NATIONAL WATER ACT

4.7.1. Environmental authorisations

The management of water is not listed in Schedule 4 or 5 of the Constitution and is therefore a residual national legislative competence.⁴⁵¹ The NWA is the principal act dealing with fresh water resources.⁴⁵²

The NWA determines that water is a public good and it is placed under the trusteeship of the national government acting through the National Minister responsible for water (Water Minister).⁴⁵³ The Water Minister is responsible to ensure that freshwater resources are allocated equitably and used beneficially in the public interest, while promoting environmental values.⁴⁵⁴

The NWA requires persons to obtain a water use licence ('WUL') for the use of water⁴⁵⁵ unless a person is otherwise entitled to water use.⁴⁵⁶ A person will be entitled to use water without a WUL for reasonable domestic use, gardening, animal watering, firefighting and recreational use, as further detailed in Schedule 1 to the NWA;⁴⁵⁷ in terms of an existing lawful water use;⁴⁵⁸ or in terms of a general authorisation published in the Government

⁴⁵⁰ *The Prevention of Environmental Pollution Ordinance No. 21 of 1981 (Kwazulu-Natal); Western Cape Health Care Waste Management Act 2 of 2007.*

⁴⁵¹ *Maccsand (Pty) Ltd v City of Cape Town and Others (SCA) [2011] ZASCA 141 para 13-14.*

⁴⁵² The supply of water services is regulated separately under the *Water Services Act 36 of 1998*. The *Water Services Act* will not be considered in this dissertation as it is not defined as a SEMA. This dissertation is limited to the consideration of the *NEMA* and *SEMA*s with regard to renewable energy technologies.

⁴⁵³ s2 and 3 of the *NWA*.

⁴⁵⁴ s3(2) of the *NWA*.

⁴⁵⁵ In terms of s22 of the *NWA* 'water use' includes: (a) taking water from a water resource; (b) storing water; (c) impeding or diverting the flow of water in a (e) engaging in a controlled activity identified as such in s37(1) or declared under s 38(1); (f) discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit; (g) disposing of waste in a manner which may detrimentally impact on a water resource; (h) disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process; (i) altering the bed, banks, course or characteristics of a watercourse; (j) removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people; and (k) using water for recreational purposes.

⁴⁵⁶ s4 of the *NWA* and s22(1) of the *NWA*.

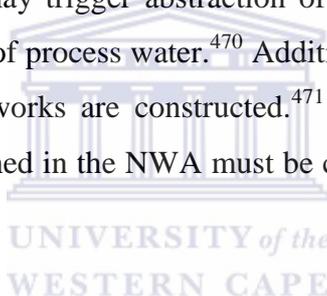
⁴⁵⁷ s4(1) of the *NWA* read with s22(1)(a)(i) and Schedule 1 of the *NWA*.

⁴⁵⁸ s4(2) read with section 22(1)(a)(ii) of the *NWA*.

Gazette.⁴⁵⁹ A general authorisation authorises the undertaking of specific water uses generally, in relation to a specific water resource, or within a specific geographical area.⁴⁶⁰ General authorisations will usually be in respect of specific period of time and specify conditions of use.⁴⁶¹

An application for a WUL must be made to the responsible authority. The responsible authority will be the relevant catchment management agency assigned by the Water Minister or, where no catchment management agency has been assigned, the Water Minister.⁴⁶²

Renewable energy technologies may trigger various water uses.⁴⁶³ For example a hydro power plant may require a water use licence to store water,⁴⁶⁴ to impede or divert the flow of water in a watercourse⁴⁶⁵ and to alter the bed, banks, course or characteristics of a water course.⁴⁶⁶ A biogas power plant require a WUL if it disposes of waste or heated water in any manner.⁴⁶⁷ Solar power plants may trigger abstraction of water from a water resource,⁴⁶⁸ storage of water,⁴⁶⁹ and disposal of process water.⁴⁷⁰ Additionally, a WUL may be required if dams, reservoirs or other waterworks are constructed.⁴⁷¹ Where a dam is a safety risk⁴⁷² additional obligations as determined in the NWA must be complied with by the owner or the person in control.⁴⁷³



Additionally, the NWA provides that activities that have a detrimental impact on water resources must be regulated by having them declared as controlled activities.⁴⁷⁴ Power

⁴⁵⁹ s4(3) read with s22(1)(a)(iii) and s19 of the NWA. General authorizations have been published in GN 399 of GG 26187 26 March 2004; GN 1199 GG 32805 of 18 December 2009; GN 665 GG 36820 of 6 September 2013; and GN 509 GG 40299 of 26 August 2016.

⁴⁶⁰ s39(1) of the NWA.

⁴⁶¹ s39(2) of the NWA.

⁴⁶² s1 of the NWA read with s41(1) of the NWA.

⁴⁶³ LexisNexis Practical Guidance online product: *Practice Area: Environmental Law: Power Generation and the Environment: Renewable Energy* (hereinafter 'LexisNexis PG: Renewable Energy').

⁴⁶⁴ s21(b) of the NWA; LexisNexis PG: *Renewable Energy: Hydro-electric power generation*.

⁴⁶⁵ s21(b) and (c) of the NWA; LexisNexis PG: *Renewable Energy: Hydro-electric power generation*.

⁴⁶⁶ s21(i) of the NWA; LexisNexis PG: *Renewable Energy: Hydro-electric power generation*.

⁴⁶⁷ s21(1)(f), (g) or (h) of the NWA; LexisNexis PG: *Renewable Energy: Biogas power plants*.

⁴⁶⁸ s21(a) of the NWA; LexisNexis PG: *Renewable Energy: Solar power plants*.

⁴⁶⁹ s21(b) of the NWA; LexisNexis PG: *Renewable Energy: Solar power plants*.

⁴⁷⁰ s21(f), (g) or (h) of the NWA; LexisNexis PG: *Renewable Energy: Solar power plants*.

⁴⁷¹ s21(b), (c), (i) and (j) of the NWA; LexisNexis PG: *Renewable Energy: Solar power plants*.

⁴⁷² Defined in s117(c) to include a dam 'which can contain, store or dam more than 50 000 cubic meters of water, whether that water contains any substance or not, and which has a wall of a vertical height of more than five meters, measured as the vertical difference between the lowest downstream ground elevation on the outside of the dam wall and the no overspill crest level or the general top level of the dam wall' or which has been declared as a safety risk under s118(2) or 118(3)(a) of the NWA.

⁴⁷³ Sections 117-23 of the NWA and the *Safety of Dams Regulations* (GNR139 GG 35062 of 24 February 2012).

⁴⁷⁴ Part 5 of the NWA.

generation which alters the flow of a regime of a water resource is specifically listed as a controlled activity.⁴⁷⁵ This will be applicable to hydro power plants. The NWA empowers the Water Minister to declare additional controlled activities.⁴⁷⁶ No additional activities relevant to renewable energy have been declared as controlled activities. The consequence of an activity being declared as a controlled activity is that a WUL must be obtained to undertake the activity.⁴⁷⁷

The NWA aims to streamline the WUL process with other authorisation processes. The responsible authority is empowered to dispense with the requirement to obtain a WUL so long as it is satisfied that the purpose of the NWA is met by the grant of the authorisation under the other law.⁴⁷⁸ Additionally, the NWA empowers the responsible authority to enter into arrangements with other organs of state to combine their respective licencing requirements and to issue a single licence.⁴⁷⁹ In giving effect to the one environmental system, the NWA was amended⁴⁸⁰ to require the Water Minister to align and integrated the process and timeframes for WUL applications with authorisations required under the MPRDA and EAs under the NEMA and or relevant SEMA.⁴⁸¹ However, unlike under NEMA and NEM:WA, the Water Minister remains the decision-making authority.

A person who wants to appeal against the decision in respect of a WUL application granted as part of the integrated process must appeal to the Water Minister.⁴⁸² This is in contrast with the amendments to the NEMA and the MPRDA giving effect to the one environmental system⁴⁸³ where the appeal authority in respect of environmental authorisations under the NEMA will always be to the Environment Minister.⁴⁸⁴

⁴⁷⁵ s37(1)(c) of the NWA.

⁴⁷⁶ s38 of the NWA.

⁴⁷⁷ s37(1) of the NWA.

⁴⁷⁸ s22(3) of the NWA.

⁴⁷⁹ s22(4) of the NWA.

⁴⁸⁰ s3(b) of the *National Water Amendment Act 27 of 2014*.

⁴⁸¹ s41(5) of the NWA.

⁴⁸² s41(6) of the NWA.

⁴⁸³ *Mineral and Petroleum Resources Development Amendment Act 49 of 2008; National Environmental Management Amendment Act 62 of 2008; National Environmental Laws Amendment Act 25 of 2004; National Water Amendment Act 27 of 2014*.

⁴⁸⁴ s43(1A) of the NEMA.

4.7.2. Critical assessment

Fragmentation under the NWA is less than under the NEM:AQA and NEM:WA. Structurally the Water Minister is mainly responsible to administer the NWA, except where he has delegated this function.⁴⁸⁵ Legislative fragmentation is also lessened where only the Environment Minister is empowered to make regulations under the NWA and this power may not be delegated.⁴⁸⁶

The NWA further creates mechanisms to facilitate co-operative governance, empowering both the Water Minister and the responsible authorities to take certain measures to avoid unnecessary duplication and to align and integrate environmental authorisation processes required under the NWA and other laws.

4.8. NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT

4.8.1. Environmental authorisations

Biodiversity forms part of the ‘environment’⁴⁸⁷ which is listed in Schedule 4 Part A of the Constitution and is therefore a concurrent competency of both national and provincial government. The NEM:BA provides for the management and conservation of South Africa’s biodiversity within the framework of the NEMA. Mechanisms provided for in the NEM:BA relevant to renewable energy projects are the provisions relating to determination of bioregional plans,⁴⁸⁸ the protection of ecosystems and species that are threatened or in need of protection,⁴⁸⁹ and management of alien and invasive species.⁴⁹⁰

⁴⁸⁵ s63 of the NWA.

⁴⁸⁶ s63(2)(a) of the NWA.

⁴⁸⁷ ‘Environment’ is defined in section 1 of *NEMA* to ‘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’ and ‘biodiversity’ is defined in section 1 of the *NEM:BA* as ‘the variability among living organisms from all sources including, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part and also includes diversity within species, between species, and of ecosystems’. Biodiversity is therefore an aspect of the environment.

⁴⁸⁸ s40 and 41 of the *NEM:BA*.

⁴⁸⁹ Ch4 of the *NEM:BA*.

⁴⁹⁰ Ch5 of the *NEM:BA*.

The Environment Minister or Environment MEC with concurrence with the Environment Minister is empowered to declare bioregions in respect geographic regions that contains whole or several nested ecosystems and is characterised by its landforms, vegetation cover, human culture and history.⁴⁹¹ Bioregional plans must be published for each bioregion.⁴⁹² The declaration of an area as a bioregion will trigger the requirement to undergo a basic assessment process in terms of the NEMA and EIA Regulations where the activity is identified in Listing Notice 3. There are no specified activities in Listing Notice 3 which directly apply to any renewable energy technology. However, in many instances associated infrastructure may trigger a specified activity. For instance where a wind farm or solar power plant is planned in a remote area of South Africa, it may be necessary to build or widen an access road which may trigger specified activities 4 and 18. It may further require the clearance of an area of 300 square metres or more of indigenous vegetation which will trigger specified activity 12. In each of these instances, if the activity is listed in Listing Notice 3, bioregional areas may trigger the requirement for EIA process to be undertaken.

Additionally, a bioregional plan will specify the land and resource uses for the bioregional area. Where a bioregional plan stipulates that no development should occur within the area, this will be taken into account by the decision-maker granting the EA.

The NEM:BA empowers the Environment Minister and Environment MEC to publish lists of ecosystems⁴⁹³ and species⁴⁹⁴ that are threatened or in need of protection.⁴⁹⁵ Listing notices may make provision for various categories of endangerment ranging from critically endangered; endangered; vulnerable and protected.⁴⁹⁶

When an ecosystem is listed as threatened and in need of protection the Environment Minister or Environment MEC may, by notice in the Government Gazette, identify any

⁴⁹¹ s40(1)(a) of the *NEM:BA*.

⁴⁹² s40(1)(b) of *NEM:BA* and *Guideline a bioregional plan must identify the location of critical biodiversity areas* (GN 291 GG 32006 16 March 2009).

⁴⁹³ s1 of the *NEM:BA* defines 'ecosystem' as a 'dynamic complex of animal, plant and micro-organism communities and their on-living environment as a functional unit'.

⁴⁹⁴ s1 of the *NEM:BA* defines 'species' to mean a 'kind of animal, plant or other organism that does not normally interbreed with individuals of another kind and includes sub-species, cultivar, variety, geographic race, strain hybrid or geographically separate population'.

⁴⁹⁵ s52 of the *NEM:BA*.

⁴⁹⁶ s52(2) of the *NEM:BA*.

process or activity as a threatening process.⁴⁹⁷ A threatening process occurring in listed ecosystem will be regarded as a specified activity for purposes of section 24(2)(b) of the NEMA requiring an basic assessment process to be undertaken in terms of an EIA Regulations and Listing Notice 3.⁴⁹⁸ A national list of threatened ecosystems in need of protection⁴⁹⁹ has been published which provides for 225 terrestrial across South Africa of which 53 are critically endangered, 64 endangered and 108 vulnerable.⁵⁰⁰ Renewable energy projects planned in a listed area will have to undergo a basic assessment process in terms of an EIA Regulations and Listing notice 3.

The consequence of listing a species as critically endangered, endangered, vulnerable or protected is that a person may not carry out a restricted activity involving a specimen of such a listed species without a permit. Restricted activity is defined broadly.⁵⁰¹ Permit applications are discussed below.

The NEM:BA also provides certain management measures in relation to alien and invasive species. A person may not carry out a restricted activity⁵⁰² in respect of an alien species without a permit⁵⁰³ unless the Environment Minister has granted an exemption in terms of section 66 of the NEM:BA. The Environment Minister must and the Environment MEC may, with concurrence of the Environment Minister, publish a list of invasive species.⁵⁰⁴ A list published by the Environment Minister applies nationally while the list published by the Environment MEC applies in the relevant province.⁵⁰⁵ Once a species is listed as an invasive species, a person is required to apply for a permit to carry out a restricted activity. The Environmental Minister has published various lists.⁵⁰⁶

⁴⁹⁷ s1 of the *NEM:BA* defines 'threatening process' as 'a process which threatens, or may threaten (a) the survival, abundance or evolutionary development of an indigenous species or ecological community; or (b) the ecological integrity of an ecosystem'.

⁴⁹⁸ s53 of the *NEM:BA* read with section 24(2)(b) of the *NEMA* read with the *EIA Regulations and Listing Notice 3*.

⁴⁹⁹ National list of ecosystems that are threatened and in need of protection (GN 1002 GG 34809 of 9 December 2011).

⁵⁰⁰ Glazewski (2015) ch 13.5.4.

⁵⁰¹ s1 of the *NEM:BA*.

⁵⁰² s1 of the *NEM:BA*.

⁵⁰³ s 65 of the *NEM:BA*.

⁵⁰⁴ s70 of the *NEM:BA*.

⁵⁰⁵ s70(1) and (2) of the *NEM:BA*.

⁵⁰⁶ *Alien and invasive species lists* (GN 599 GG 37886 of 1 August 2014 and GN 864 GG 40166 of 29 July 2016).

Permit applications must be made to the issuing authority.⁵⁰⁷ The issuing authority will be the Environment Minister in all instances listed in section 87A of the NEM:BA. In all other instances the Environment MEC is the issuing authority.⁵⁰⁸ Despite these provisions, the Environment Minister and the Environment MEC may in writing agree that a permit which the Environment Minister or the Environment MEC is empowered to issue, be issued by the other.⁵⁰⁹ As part of the permit application for alien and invasive species prescribed risk assessments must be undertaken.⁵¹⁰ The issuing authority may also request an applicant for a permit to carry out a restricted activity in respect of a threatened and protected species to undertake a risk assessment or provide expert evidence.⁵¹¹

Restricted activities are defined differently for threatened and protected species and alien and invasive species.⁵¹² However, it is conceivable with regard to both definitions that a renewable energy project could trigger a restricted activity and that permits will have to be obtained.⁵¹³

In respect of the permitting requirements, the NEM:BA makes provision for integrated permitting. Where a restricted activity requiring a permit under NEM:BA also requires authorisation under another law, the authorities empowered to issue the authorisations may choose to exercise the power jointly and to issue a single integrated permit.⁵¹⁴ Where the issuing authority in respect of both authorisations under NEM:BA and the other law is the same authority, that authority may also issue an integrated permit.⁵¹⁵

4.8.2. Critical assessment

Structural fragmentation occurs as both the Environment Minister and Environment MECs have administrative powers in respect of biodiversity management, for example the authority

⁵⁰⁷ s88 of the *NEM:BA*.

⁵⁰⁸ s78A(2) of the *NEM:BA*.

⁵⁰⁹ s78A(3) of the *NEM:BA*.

⁵¹⁰ s65(2) and 71(2) of the *NEM:BA*.

⁵¹¹ s89 of the *NEM:BA*.

⁵¹² s1 of the *NEM:BA*.

⁵¹³ For example, a renewable energy project may require the cutting, chopping off, uprooting, damaging or destroying of a listed and protected species (to clear a field for development); or to convey, move or otherwise translocate a listed and protected species or alien and invasive species.

⁵¹⁴ s92(1) of the *NEM:BA*.

⁵¹⁵ s92(2) of the *NEM:BA*.

to decide permit applications in terms of section 87 of the NEM:BA.⁵¹⁶ Additionally, various empowering provisions create vertical legislative fragmentation where both the Environmental Minister and the Environment MEC are empowered to identify species and ecosystems that are threatened and in need of protection and alien and invasive species.⁵¹⁷

EA processes specifically with regard to listed and protected ecosystems, are better aligned than is the case under the NEM:WA and the NEM:AQA. This is because when the listing of an ecosystem triggers the need for an EA under the NEMA and Listing Notice 3, it does not also require a separate authorisation under the NEM:BA. However, the requirement to obtain permits in respect of restricted activities in respect of listed species that are threatened and in need of protection and alien and invasive species do create legislative sectoral fragmentation. Co-operative governance is however encouraged and empowering provisions are included in the NEM:BA in respect of integrated permitting.⁵¹⁸

4.9. NATIONAL ENVIRONMENTAL MANAGEMENT: PROTECTED AREAS ACT

4.9.1. Environmental authorisations

Nature conservation is listed in Schedule 4 Part A and is therefore a concurrent competency of both national and provincial government. National parks, national botanical gardens and marine resources are however specifically excluded and qualify as residual national legislative competences.⁵¹⁹ NEM:PAA forms part of the national strategy to manage and conserve biodiversity and establishes a framework for the declaration and management of protected areas; the integration of protected areas within broader national planning instruments; and cooperative governance in respect of protected areas.⁵²⁰ It designates the State as the trustee of the nation's protected areas.⁵²¹

⁵¹⁶Kotze LJ (2006) 3.

⁵¹⁷ s52, 56, 65 and 70 of the *NEM:BA*. Kotze LJ (2006) 3-4.

⁵¹⁸ s92 of the *NEM:BA*.

⁵¹⁹ Schedule 4 Part A of the *Constitution; Maccsand (Pty) Ltd v City of Cape Town and Others* (SCA) [2011] ZASCA 141 para 13-14.

⁵²⁰ s2 of the *NEM:PAA*; Glazewski (2015) ch12.7.1.1.

⁵²¹ s3 of *NEM:PAA*.

The NEM:PAA provides for various kinds of protected areas which include special nature reserves, national parks, nature reserves and protected environments; world heritage sites, marine protected areas; specifically protected forest areas, forest nature reserves and forest wilderness areas as declared under the National Forests Act;⁵²² and mountain catchment areas declared under the Mountain Catchment Areas Act.⁵²³

Only the Environment Minister is empowered to declare special nature reserves,⁵²⁴ national parks,⁵²⁵ and marine protected areas.⁵²⁶ The Environment Minister and the Environment MEC are empowered to declare nature reserves⁵²⁷ and protected environments.⁵²⁸ Each type of protected area must fulfil certain criteria specified in respect of that type of protected area before it can be declared.⁵²⁹

In terms of Listing Notice 3⁵³⁰ certain activities in or in close proximity to protected areas⁵³¹ and sites protected in terms of the World Heritage Convention Act⁵³² are listed as specified activities for purposes of section 24(2) NEMA. Commencing with these activities will trigger the requirement to undertake a basic assessment process under the NEMA and EIA Regulations. Further, in terms of the Biodiversity Policy and Strategy for South Africa: on Buffer Zones for National Parks⁵³³ buffer zones⁵³⁴ may be established around a national park for purposes of conservation and to ensure effective protection of a national park.⁵³⁵ Activities being planned in a buffer zone may likewise trigger a specified activity. Similar to the discussion under bioregions there are no specified activities in Listing Notice 3 which directly apply to any renewable energy technology. However, in many instances associated infrastructure may trigger a specified activity.

⁵²² *National Forests Act* 84 of 1998.

⁵²³ *Mountain Catchment Areas Act* 63 of 1970; s9 of the *NEM:PAA*.

⁵²⁴ s18 of the *NEM:PAA*.

⁵²⁵ s20 of the *NEM:PAA*.

⁵²⁶ s22A of the *NEM:PAA*.

⁵²⁷ s23 of the *NEM:PAA*.

⁵²⁸ s28 of the *NEM:PAA*.

⁵²⁹ s18(2) of the *NEM:PAA* lists criteria for special nature reserves; s20(2) of the *NEM:PAA* lists criteria for national parks; s22A(2) of the *NEM:PAA* lists criteria for marine protected areas; s23(2) of the *NEM:PAA* lists criteria for nature reserves; s28(2) of the *NEM:PAA* lists criteria for protected areas.

⁵³⁰ *EIA Regulations*.

⁵³¹ s9 of *NEM:PAA*.

⁵³² *World Heritage Convention Act* 49 of 1999.

⁵³³ *Biodiversity Policy and Strategy for South Africa: strategy on buffer zones for national parks: for general information* GN 106 GG 35202 of 8 February 2012 ('*Buffer Zone Strategy*').

⁵³⁴ 'Buffer zone is defined in the *Buffer Zone Strategy* to mean the immediate setting of the national park and attributes that are functionally important as a support to the national park and its protection.

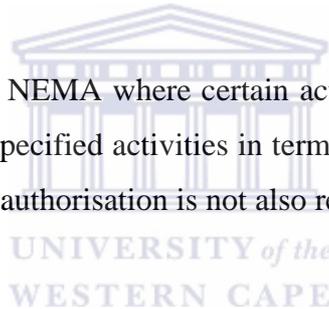
⁵³⁵ *Buffer Zone Strategy* 3.

Lastly, the NEM:PAA specifically provides for a list of activities which are restricted in marine protected areas despite any other legislation.⁵³⁶ The Environment Minister may however prescribe certain zones to regulate different types of activities in respect of which permits must be obtained to undertake the activities.⁵³⁷ None has been prescribed to date.

4.9.2. Critical assessment

Vertical structural fragmentation occurs as both the Environment Minister and Environment MECs have administrative powers in respect of nature conservation, except for certain specified instances.⁵³⁸ Legislative vertical fragmentation⁵³⁹ is created in the NEM:PAA in line with the competencies specified in Schedule 4 of the Constitution, where only the Environment Minister may declare special nature reserves,⁵⁴⁰ national parks,⁵⁴¹ and marine protected areas.⁵⁴² However, both the Environment Minister and the Environment MEC are empowered to declare nature reserves⁵⁴³ and protected environments.

EA processes is aligned with the NEMA where certain activities in or in close proximity to protected areas may be listed as specified activities in terms of Listing Notice 3 triggering an EA under the NEMA. A separate authorisation is not also required under the NEM:PAA.



4.10. NATIONAL ENVIRONMENTAL MANAGEMENT: INTEGRATED COASTAL MANAGEMENT ACT

4.10.1. Environmental authorisation

NEM:ICMA provides for the establishment of the coastal zone.⁵⁴⁴ The coastal zone includes coastal public property,⁵⁴⁵ the coastal protection zone,⁵⁴⁶ coastal access land⁵⁴⁷ and coastal

⁵³⁶ s48A(1) of the *NEM:PAA*.

⁵³⁷ s48A(2) of the *NEM:PAA*.

⁵³⁸ Schedule 4 Part A of the *Constitution*; Kotze LJ (2006) 3.

⁵³⁹ Kotze LJ (2006) 4-5.

⁵⁴⁰ s18 of the *NEM:PAA*.

⁵⁴¹ s20 of the *NEM:PAA*.

⁵⁴² s22A of the *NEM:PAA*.

⁵⁴³ s23 of the *NEM:PAA*.

⁵⁴⁴ s1 of *NEM:ICMA*.

⁵⁴⁵ Defines in s7 of the *NEM:ICMA*.

⁵⁴⁶ s16 of *NEM:ICMA*.

⁵⁴⁷ s18 of *NEM:ICMA*.

protected areas,⁵⁴⁸ the seashore,⁵⁴⁹ coastal waters and the exclusive economic zone,⁵⁵⁰ and for the co-ordinated management of the coastal zone within the framework of NEMA by all spheres of government.⁵⁵¹

The practical consequence from a renewable energy project planning perspective is that in terms of the Listing Notice 1, 2 and 3 of the NEMA⁵⁵² certain activities which may not otherwise require an EIA will qualify as a listed or specified activity, merely by virtue of it being in the coastal zone. For example, activity 15 in Listing Notice 1 determines that basic assessment must be undertaken in respect of the development of structures in the coastal public property where the development footprint is bigger than 50 square metres.⁵⁵³ In such instances NEM:ICMA requires the CA to take into account, in addition to considerations specified in NEMA, the relevant factors listed in section 63 of the NEM:ICMA.

Additionally, the NEMA empowers CAs to determine development set-backlines in respect of the sea, estuaries and water courses.⁵⁵⁴ For example certain activities cannot be undertaken without an EA if they occur within a specified distance from the high-water mark (eg. 100 metres, 200 metres or 1 kilometre, depending on the activity). Therefore, when a renewable energy project is planned in close proximity to the coastal zone, it should be established whether a set-back line has been determined and adopted by the CA which may trigger the need for an EIA.

The Environment Minister is further empowered to list activities in the Government Gazette that are prohibited within coastal public property or that require a coastal use permit from the Environment Minister, provided that the activity does not already require an EA under the NEMA and the EIA Regulations.⁵⁵⁵ Coastal use permits do not relieve the holder of obligations to obtain other coastal authorisations required under the NEM:ICMA or

⁵⁴⁸ s22 of *NEM:ICMA*.

⁵⁴⁹ s26 of *NEM:ICMA*.

⁵⁵⁰ s7 of *NEM:ICMA*.

⁵⁵¹ s2 of the *NEM:ICMA*.

⁵⁵² Listing Notices.

⁵⁵³ Certain exclusions are provided for in the Listing Notice which is not relevant here. Activity 15 *Listing Notice 1* of the *NEMA*.

⁵⁵⁴ Defined in *Listing Notice 1, 2 and 3* to mean 'setback line defined or adopted by the competent authority'.

⁵⁵⁵ s65(1) of the *NEM:ICMA*.

authorisations required under any other act.⁵⁵⁶ Permits must be given for a fixed period of no more than 20 years and is subject to conditions determined by the Environment Minister.⁵⁵⁷

NEM:ICMA also regulates the discharge effluent into coastal waters, by way of general authorisations and permit system;⁵⁵⁸ and dumping at sea by way of permit system.⁵⁵⁹

4.10.2. Critical assessment

National, provincial and local government have administrative duties and functions under the NEM:ICMA creating vertical structural fragmentation.⁵⁶⁰ Vertical legislative fragmentation is created where the Environment Minister and Environment MEC have legislative powers: for instance the Environment Minister is empowered to declare special management areas⁵⁶¹ while the Environment MEC is empowered to set costal management lines.⁵⁶² Cooperation between the Environment Minister and Environment MEC is provided for where the NEM:ICMA specifically requires the Environment Minister to consult with the Environment MEC when considering declaring an area as a special management area.⁵⁶³

EA processes under the NEM:ICMA is coordinated and streamlined to occur within the regulatory framework created under the NEMA, only requiring additional factors to be considered in an application for EA.

4.11. ADDRESSING FRAGMENTATION: ALTERNATIVE ENVIRONMENTAL MANAGEMENT TOOLS

The NEMA provides for a range of environmental management tools and aims as an objective of EIM that the most appropriate tool be employed in respect of a particular activity.⁵⁶⁴ However, of these tools, only the EIA management tool has been extensively

⁵⁵⁶ s65(5) of the *NEM:ICMA*.

⁵⁵⁷ s66(a) and (b) of the *NEM:ICMA*.

⁵⁵⁸ s69 of the *NEM:ICMA*.

⁵⁵⁹ s71(1) of the *NEM:ICMA*.

⁵⁶⁰ Kotze LJ (2006) 3.

⁵⁶¹ s23(1) of the *NEM:ICMA*.

⁵⁶² s25(1) of the *NEM:ICMA*.

⁵⁶³ s23(1) of the *NEM:ICMA*.

⁵⁶⁴ s23(1) of the *NEMA*.

developed in regulations and implemented.⁵⁶⁵ In respect of the NEMA requirement that programmes, plans and policies also be assessed, the environmental management tools which would be most appropriate to employ in such instances include the Environmental Management Frameworks and Strategic Environmental Assessments (SEA). SEAs in particular can play a supportive role in strengthening the implementation aspect of sustainable development, currently identified as the Achilles heel to achievement in practice.⁵⁶⁶ Although this tool has been used in practice,⁵⁶⁷ no guidance to its use and application is provided for in the NEMA or regulations.

As part of the *Integrated Environmental Management Information Series* DEA published the Strategic Environmental Assessments guideline document which provides high-level guidance on what SEAs are and how it can be utilised.⁵⁶⁸ According to the SEA Guideline, this management tool evolved as complimentary tool to EIAs; its main purpose being to determine the environmental impacts of policies, plans and programmes.⁵⁶⁹ The role of the SEA is therefore not to assess environmental impacts at project level. Rather it is a proactive tool that can be used to facilitate the consideration of the objectives of sustainability at the earliest stages of decision-making.⁵⁷⁰ The SEA Guideline sets out various functions that SEAs can fulfil, discussing the key characteristics of each shortly. It does not give guidance as to which function is preferable from a South African perspective or further guidance as to how it should be applied in practice.

SEAs have the potential to provide proponents of renewable energy projects applicants with an early indication of the areas in which a project may be appropriate. Additionally, it can be used to facilitate the consideration of applications for EA in respect of renewable energy projects as it provides the decision-maker with relevant information regarding the area. It can further facilitate cooperative governance through the identification of different regulatory responsibilities and recommending mechanisms for addressing the needs of the relevant authorities. Despite the lack of environmental regulation, the SEA environmental

⁵⁶⁵ Kotze LJ, Nel JG & Du Plessis W et al 'Strategies to integrate environmental policy at the operational level: towards an integrated framework for environmental authorizations' (2007) 14 *SAJELP* 62.

⁵⁶⁶ Vinuales (2013) 3.

⁵⁶⁷ Department of Environmental Affairs *Strategic Environmental Assessment for wind and solar and solar PV energy in South Africa – Renewable Energy Development Zones* (2013-2015) (<https://redzs.csir.co.za/> accessed on 27 July 2016). (hereinafter the REDZ SEA')

⁵⁶⁸ Department of Environmental Affairs *Strategic Environmental Assessments, Integrated Environmental Management, Information Series* 10 (2004) (hereinafter the SEA: Information Series (2004)).

⁵⁶⁹ SEA: Information Series (2004) 4.

⁵⁷⁰ SEA: Information Series (2004) 4.

management tool has been successfully employed in identifying optimum development zones for renewable energy projects.⁵⁷¹ The author argues that the contribution this tool can make to the furtherance of renewable energy projects and sustainable energy solutions will be greatly enhanced if better regulation for its use and application is developed to ensure the appropriate assessment of the impacts of policies, programmes and plans on the environment. This can be done by including the following elements into the SEA: identification of broad plans and programme alternatives; screening; scoping; situation assessment; formulation of sustainability parameters for the development of the policy or programme; mechanisms to deal with trade-offs; the development and assessment of alternatives; decision-making; and monitoring and auditing.⁵⁷²

4.12. CONCLUSION

Sustainable development requires the integration of socio-, economic- and environmental concerns. However, fragmentation is observed at two distinct levels: The first level of fragmentation is observed where different line functions in government are mandated with environmental management and energy. Although both government departments must ultimately ensure sustainable utilisation of natural resources, environmental laws, within a framework of IEM, are mainly focussed on environmental protection and conservation and pollution prevention; energy laws are aimed at facilitating economic growth and social upliftment by converting and supplying more primary energy natural resources to, among others, electricity.⁵⁷³

The principal mechanism to address the fragmentation is co-operative governance. NEMA provides for this purpose that certain government departments must prepare EIP and EMPs. However, the effectiveness of these instruments to ensure alignment of policies and plans has been watered down by the repeal of provisions creating the Committee for Environmental Co-ordination and empowering input by the DEA before approval of the plans.

⁵⁷¹ REDZ SEA.

⁵⁷² SEA: Information Series (2004) 8.

⁵⁷³ Murombo T (2015) 5-6.

At an energy project level, the NEMA and SEMAs provide various mechanisms to increase coordination and cooperation between state departments where another state department is also responsible for an aspect of activity which is subject to environmental regulation. An example of such coordination is the one environmental system. However, similar agreements have not yet been reached in respect of sustainable energy solutions such as renewable energy projects.

At a secondary level, fragmentation occurs within IEM. In this regard the EIA environmental management tool in the NEMA and the SEMA was assessed and it was found that in respect of each of the laws discussed, fragmentation was identified institutionally from a vertical and horizontal perspective, and legislatively from a vertical, horizontal, sectoral and inter-sectoral fragmentation. This fragmentation creates unsustainable results.⁵⁷⁴ Although the fragmentation is not specific only to renewable energy technologies it does hamper an enabling environment for renewable energy project investment from an environmental law perspective. As such environmental law can be seen as an obstacle to enable sustainable energy solutions in furthering the ideal of sustainable development.

Another problem that presents itself in the environmental management regime is that current environmental management tools mainly cater for project level impacts on the environment by means of the EIA. Other tools, specifically those assessing the environmental impact of policies, plans and programmes, are not well-developed with little to no guidance provided for in regulations and departmental guidelines. This results in the EIA being used beyond its purpose and appropriate application.⁵⁷⁵ Additionally, the EIA process is cumbersome, costly and fragmented resulting in duplication and often inconsistencies in processes and findings.⁵⁷⁶

It is argued that SEAs have the potential to play a significant role in energy planning, especially if it can be applied to assessing the environmental impact of energy policies such as the IRP.

⁵⁷⁴ Kotze LJ (2006) 19.

⁵⁷⁵ Draft EIAMS 134.

⁵⁷⁶ Kotze LJ, Nel JG, Du Plessis W, et al (2007) 59-60.

5. CONCLUSION

Energy is essential for social and economic development, and as such, access to affordable energy remains a top priority of our government. However, energy also impacts on the environment and in order to ensure that energy planning conform to the ideal of sustainable development, the regulation of energy must offer sustainable solutions. Sustainable energy presupposes energy regulation that is environmentally, economically and socially sound, and that conforms to the principle of equity, while promoting the development of current and future generations.⁵⁷⁷ Renewable energy qualifies as a source of sustainable energy; especially when compared to conventional energy production from fossil fuels. As such, renewable energy as a sustainable energy source should be promoted in order to ensure energy regulation complies with the constitutional environmental right based on sustainable development.

The dissertation has shown that the concept of sustainable development failed to realise sustainable energy solutions. The dissertation identified two reasons which may have contributed to this. The first relate to the failure of the energy law order including the electricity regulatory regime to legislate how environmental concerns must be incorporated, while access to affordable energy is being pursued. No legal duties are stipulated with regards to environmental considerations in, for example, the consideration of electricity licences. Additionally, there are no legal rules which practically determine how trade-offs between the objectives of access to affordable energy must be weighed against the impacts of energy and how trade-offs must be dealt with. The failure, to date, of the energy and electricity regulatory regime to set clear legal principles and to create specific duties and obligations with regards to the achievement of renewable energy targets, and specifying mechanisms for dealing with inevitable trade-offs between environmental concerns with economic and social concerns have resulted insufficient integration of environmental concerns in the energy law order as required by the sustainable development. Therefore, sustainable development is not implemented by the electricity regulatory regime.⁵⁷⁸

⁵⁷⁷ Barnard M (May 2014) pg 124.

⁵⁷⁸ See Chapter 3.

The second reason identified in this dissertation as to why the sustainable development has failed to give effect to sustainable energy solutions in practice was explored in Chapter 4 relates and relates to the problem of fragmentation. Fragmentation occurs where different government departments are tasked with environmental management and energy, and their failure to give coordinated effect to the common mandate of sustainable use of natural resources. Cooperative governance mechanism should align government action but recent amendments to the NEMA have reduced its effectiveness. Further, cooperative governance mechanisms which are created and which may increase integrated governance are not fully utilised.

Fragmentation also occurs within the IEM regime, specifically with regard to EIA process under the NEMA and SEMAs. Fragmentation occurs both horizontally and vertically from an institutional and legislative perspective. Fragmentation within the EIA process is contrary to the requirement of cooperative, holistic and integrated governance, as required by IEM⁵⁷⁹ and may result in unsustainable results,⁵⁸⁰ undermining the realisation of sustainable energy solutions to give effect to sustainable development.

[Final word count (including footnotes) = 28 427 words]

⁵⁷⁹ Refer to the definition of 'environment' in s1 of the *NEMA*; Kotze LJ (2006) 19.

⁵⁸⁰ Kotze LJ (2006) 19.

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