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# GOVERNMENT NOTICES • GOEWERMENTSKENNISGEWINGS

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## DEPARTMENT OF ENERGY

NO. 255

16 MARCH 2016



2015-2020

3RD EDITION  
MANAGEMENT PLAN

ENVIRONMENTAL

COMPILED IN TERMS OF SECTION 11(2) OF THE NATIONAL  
ENVIRONMENTAL MANAGEMENT ACT 1998 (ACT 107 OF 1998)

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**ABBREVIATION LIST**

ADAM	Approach to Distribution Asset Management
AEMFC	African Exploration Mining and Finance Corporation
ALARA	As Low As Reasonably Achievable
CCS	Carbon Capture Storage
CDM	Clean Development Mechanism
CEF	Central Energy Fund
CSIR	Council for Scientific and Industrial Research
DBE	Department of Basic Education
DEA	Department of Environmental Affairs
DED	Department of Economic Development
DHS	Department of Homeland Security
DM	Disaster Management
DME	Department of Minerals and Energy
DMR	Department of Minerals Resources
DoE	Department of Energy
DoH	Department of Health
DoL	Department of Labour
DPW	Department of Public Works
DSM	Demand Side Management
DST	Department of Science and Technology
DTI	Department of Trade and Industry
DWAF	Department of Water Affairs and Forestry
DWS	Department of Water and Sanitation
EA	Environmental Assessment
EEDSM	Energy Efficiency and Demand Side Management
EERS	Energy Efficiency Regulatory Standards
EIP	Environmental Implementation Act
EMP	Environmental Management Plan
GDP	Gross Domestic Product
GG	Government Gazette

GTL	Gas to Liquid
HDI	Historically Disadvantaged Individuals
IAEA	International Atomic Energy Agency
IEM	Integrated Environmental Management
IEP	Integrated Energy Plan
INEP	Integrated National Electricity Plan
IPP	Independent Power Producer
IRFA	Intergovernmental Relations Framework Act
IRP	Integrated Resource Plan
LeU	Low enriched Uranium
NAMSA	NATO Management and Supply Agency
NDoT	National Department of Technology
NDP	National Development Plan
NECSA	The South African Nuclear Energy Corporation
NEEA	National Energy Efficiency Agency
NEMA	National Environmental Management Act
NERSA	National Energy Regulator of South Africa
NNEECC	National Nuclear Energy Executive Coordination Committee
NNR	National Nuclear Regulator
NPC	National Petroleum Council
NRWDI	National Radioactive Waste Disposal Institute
NRWMP	National Radioactive Waste Management Policy
NT	National Treasury
PASA	Petroleum Agency of South Africa
PetroSA	The Petroleum Oil and Gas Corporation of South Africa
PSIF	Public Safety and Information Forum
RAS	Regulatory Accounting System
RDLR	Rural Development and Land Reform
SABS	South African Bureau of Standards
SANEDI	South African National Energy Development Institute
SAPIA	The South African Petroleum Industry Association



SARS	South African Revenue Services
SASDA	The South African Supplier Development Agency
SAWEP	South African Wind Energy Programme
SETRM	Solar Energy Technology Roadmap
SFF	Strategic Fuel Fund
SOC	State Owned Company
SOE	State Owned Enterprises
SSRP	Safety Standards and Regulatory Practices
STANSA	Standards South Africa

## 1. SECTION 1: INTRODUCTION

The National Environmental Management Act, 1998 (NEMA), Section 11, requires national and provincial government departments listed in Schedules 1 and 2 of NEMA, 1998, to prepare Environmental Implementation Plans (EIP) and/or Environmental Management Plans (EMP), respectively, within at least every 5 years. The Department of Energy (DoE) is listed as a Schedule 2 department and is consequently required to prepare an EMP every 5 years. This EMP represents the 3<sup>rd</sup> edition EMP (period 2015 to 2020) and applies to the DoE and its relevant State Owned Companies (SOCs) and State Owned Entities (SOEs).

### 1.1. PURPOSE OF THE EMP

In an attempt to establish a more integrated or co-operative approach to environmental governance, the South African legal framework makes extensive provision for co-operative environmental governance in, inter alia, the Constitution of the Republic of South Africa, 1996 (Constitution); the National Environmental Management Act, 1998 (NEMA); sectoral environmental legislation; and the Intergovernmental Relations Framework Act, 2005 (IRFA) (Fuggle & Rabie, 2009). With specific reference to Chapter 3 of NEMA provision is made for procedures or mechanisms to facilitate co-operative environmental governance. These co-operative environmental governance mechanisms include EIP's and EMP's, which apply depending on whether a specific government department exercises functions which may affect the environment (Schedule 1 departments), or functions involving the management of the environment (Schedule 2 departments) respectively. The DoE is listed as a Schedule 2 department and consequently is required to prepare an EMP. The primary purpose of the EMP is to co-ordinate and harmonise the environmental policies, plans, programmes and decisions of the various national departments that exercise functions that may affect the environment or are trusted with powers and duties aimed at the achievement, promotion and protection of a sustainable environment, including provincial and local spheres of government, in order to minimise the duplication of procedures and functions (Fuggle & Rabie, 2009).

#### Definition of Environment (NEMA):

“environment” means the surroundings within which humans exist and that are made up of -

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

## 1.2. SCOPE OF THE EMP

In accordance with Section 12 of the NEMA, the purpose of environmental implementation and management plans is to -

- (a) coordinate and harmonise the environmental policies, plans, programmes and decisions of the various national departments that exercise functions that may affect the environment or are entrusted with powers and duties aimed at the achievement, promotion, and protection of a sustainable environment, and of provincial and local spheres of government, in order to –
  - (i) minimise the duplication of procedures and functions; and
  - (ii) promote consistency in the exercise of functions that may affect the environment;
- (b) give effect to the principle of cooperative government in Chapter 3 of the Constitution;
- (c) secure the protection of the environment across the country as a whole;
- (d) prevent unreasonable actions by provinces in respect of the environment that are prejudicial to the economic or health interests of other provinces or the country as a whole; and
- (e) enable the Minister to monitor the achievement, promotion, and protection of a sustainable environment.

Section 14 of NEMA provides the minimum requirements that every EMP must contain. Further, in an effort to provide guidance to relevant departments, the Department of Environmental Affairs (DEA) published guidelines for the preparation and implementation of EIP's and EMP's, required in terms of the procedures for co-operative governance stipulated in chapter 3 of NEMA (Department of Environmental Affairs, 2014). Section 14 of NEMA further requires the following, as minimum content for the EMP:

- a description of the functions exercised by the relevant department in respect of the environment;
- a description of environmental norms and standards, including norms and standards contemplated in section 146(2)(b)(i) of the Constitution, set or applied by the relevant department;
- a description of the policies, plans and programmes of the relevant department that are designed to ensure compliance with its policies by other organs of state and persons;
- a description of priorities regarding compliance with the relevant department's policies by other organs of state and persons;
- a description of the extent of compliance with the relevant department's policies by other organs of state and persons;
- a description of arrangements for cooperation with other national departments and spheres of government, including any existing or proposed memoranda of understanding entered into, or delegation or assignment of powers to other organs of state, with a bearing on environmental management; and

- proposals for the promotion of the objectives and plans for the implementation of the procedures and regulations referred to in Chapter 5.

### 1.3. HISTORY OF THE DOE EMP

The 1<sup>st</sup> edition EMP applicable to the now DoE, was published on 23 February 2001 in the Government Gazette (GG) No. 22080 of 23 February 2001, for the then Department of Minerals and Energy (DME). The 2<sup>nd</sup> edition EMP, also for the DME, was published on the 16<sup>th</sup> July 2008 in the GG No. 31188 of 16 July 2008. This EMP represents the 3<sup>rd</sup> edition EMP and applies to the DoE and its relevant State Owned Companies (SOCs) and State Owned Entities (SOEs).

### 1.4. STRUCTURE OF THE EMP

This EMP has been structured to align with the requirements of Chapter 3 of NEMA and more specifically the DEA Guideline (Department of Environmental Affairs, 2013). The Department EMP is presented in the following sections:

1. Introduction: This introduction sets out the need, purpose and context of the EMP within the relevant legislative requirements.
2. Mandate and Institutional Structure: This section discusses the mandate, mission, vision, values, key strategic objectives and institutional structure of the DoE and its SOCs and SOEs.
3. Legislative Framework: This section aims to provide an overview of the legislative foundation for general environmental management in South Africa, co-operative governance, and the DoE specifically.
4. Overview of the Policies, Strategies, Plans and Programmes: This section provides an overview of norms and standards, policies, strategies, plans and programmes set or applied by the DoE in carrying out their environmental management functions.
5. Environmental management priorities: This section aims to identify and provide a description of the DoE priorities in respect of carrying out its environmental management functions.
6. Compliance status and challenges: This section provides an overview of the mechanisms in place to monitor compliance with the EMP, and also to describe challenges being experienced with complying with the DoE's policies.
7. Co-operative governance: This section provides a description of arrangements for co-operation between the DoE (and relevant SOCs and SOEs) with other national departments and/or spheres of government.
8. Implementation Plan: This section provides feedback on identified challenges and recommendations for future implementation of Integrated Environmental Management (IEM) tools in so far as they relate to the DoE's environmental mandate.
9. Outcomes and Priority Indicators: This section identifies performance indicators that may be used by the DoE in monitoring and reporting on this EMP during the 5 year period.

## 2. SECTION 2: MANDATE, OBJECTIVES, AND INSTITUTIONAL STRUCTURE

This section focuses on presenting the departmental structures and functions exercised by the DoE. This section is based on, and informed by the DoE Strategic Plan (Department of Energy, 2012), and the DoE's Annual Performance Plan (Department of Energy, 2014).

### 2.1. DEPARTMENT OF ENERGY

The DoE's adopted mandate, vision, mission and set of core values which guide the execution of the mandate are provided in this section.

- **Mandate:** To ensure secure and sustainable provision of energy for socio-economic development.
- **Mission:** To regulate and transform the sector for the provision of secure, sustainable and affordable energy.
- **Vision 2014:** A transformed and sustainable energy sector with universal access to modern energy.
- **Vision 2025:** Improvement of energy mix by obtaining 30% clean energy by 2025.

Values	
Accountability:	• The acknowledgment and assumption of responsibility for our actions, decisions, policies and administrative and governance (Department of Energy, 2014).
Batho Pele:	• "People First": Service orientated, strives for excellence in service delivery and commits to continuous service delivery improvement for the achievement of a better-life for all and seeks to include all citizens through services and programmes (Department of Energy, 2014).
Ethics:	• Moral principles as reflected by the Code of Conduct for Public servants (Department of Energy, 2014).
Honesty:	• Represents a facet of moral Character and denotes positive virtues such as integrity, truthfulness, and straightforwardness along with the absence of lying, cheating or theft (Department of Energy, 2014).
Integrity:	• Consistency of actions, values, methods, measures, principles, expectations, and outcomes and is regarded as the honesty and truthfulness or accuracy of one's actions (Department of Energy, 2014).
My Public Servant:	• My Future (We belong, We care, We Serve): Represents public servants at the centre of delivery quality services to the citizens in line with the dictates of the Constitution of the Republic (Department of Energy, 2014).
Professionalism:	• Represents workers, who enjoy considerable work autonomy and are commonly engaged in creative and intellectually challenging work that requires impressive competence in a particular activity (Department of Energy, 2014).
Ubuntu:	• Represents our interconnectedness and our approach that is open, available and affirming of others (Department of Energy, 2014).

FIGURE 1: DOE VALUES

The DoE's Revised Strategic Plan (Department of Energy, 2012) outlines the departments strategic objectives expressed as desired end-states as follows:

- Energy supply is secure and demand is well managed.
- An efficient, competitive and responsive energy infrastructure network.

- Improved energy regulation and competition.
- Efficient and diverse energy mix for universal access within a transformed energy sector.
- Environmental assets and natural resources protected and continually enhanced by cleaner energy technologies.
- Mitigation against, and adaptation to, the impacts of climate change.
- Good corporate governance for effective and efficient service delivery.

The DoE has identified specific Programmes/ Branches to address the above mentioned key Strategic Objectives.

The DoE became a stand-alone department from the DME in 2009. The recent restructuring of the DoE resulted in the introduction of four new line-function branches namely: Policy development; Energy Operational Services; Integrated Energy Planning and Nuclear Energy. The new departmental structure (see Annexure B) was informed by the desire to address shortcomings in identified service delivery gaps and enhance effective performance across the whole department (Department of Energy, 2012). The Department has 8 branches, with respective Chief Directorates, Directorates and Sub-directorates.

Listed below are the 8 Branches of the Department, as well as where relevant, the Chief Directorates and Directorates that involve the environment.

- Branch: Energy Policy and Planning , Chief directorate: Electricity, Energy Efficiency and Environmental Policy, Directorate : Energy Efficiency and Environmental Policy
- Branch: Petroleum and Petroleum Products Regulation
- Branch : Nuclear Energy , Chief Directorate: Nuclear Safety and Technology
- Branch: Clean Energy, Chief directorates: Energy Efficiency , Renewable Energy, Climate Change and Designated National Authority
- Branches: Energy Programmes and Projects, Chief Directorates: INEP, Electricity Infrastructure / Industry Transformation , Directorate : Community Upliftment Programmes and Projects, Energy Programmes and Projects
- Branches: Governance and Compliance :Monitoring and Evaluation and SoE Oversight
- Branches: Corporate Services
- Branches: Financial Management

Please refer to Annexure C for a detailed representation of the branches of the Department.

## 2.2. STATE OWNED COMPANIES AND ENTITIES

The Minister of Energy is responsible for overseeing five State Owned Entities (SOEs) and their subsidiaries. The State Owned Companies (SOCs) and SOEs provide related services in support of the Departments mandate through funded and non-funded statutory bodies and organisations. The objective of the SOCs/SOEs is to enhance the Departments objectives through policies and directives, promotion of its legislative mandate and; to

create an environment conducive to investment and the improvement of the quality of life of all South Africans. They are:

- the Central Energy Fund (CEF) Group of companies under CEF (Pty) Ltd;
- the South African Nuclear Corporation (NECSA);
- the National Energy Regulator of South Africa (NERSA),
- the National Nuclear Regulator (NNR);
- the Petroleum Oil and Gas Corporation of South Africa (PetroSa); and
- the South African National Energy Development Institute (SANEDI).

Sections 2.2.1 to 2.2.6 provide a brief description of the SOCs and SOEs (Department of Energy, 2014) (Department of Energy, 2012). Please refer to Annexure A for more details on the State Owned Companies and State Owned Entities.

#### 2.2.1. CEF GROUP

The CEF Group is governed by the Central Energy Fund Act, 1977 and is a private company established in terms of the Companies Act. The CEF group controls several entities in the energy sector in commercial, strategic, regulatory and developmental roles. The CEF group consists of five operating subsidiaries namely: the Petroleum Oil and Gas Corporation of South Africa (PetroSA); Petroleum Agency of South Africa (PASA); the Strategic Fuel Fund Association (SFF); the South African Supplier Development Agency (SASDA); and African Exploration Mining and Finance Corporation (AEMFC). CEF's mandate with respect to the environment is to research, finance, develop and explore appropriate energy solutions across the spectrum of energy resources to meet South Africa's future energy needs. The CEF's vision is to "Be a leader in the financing, development and implementation of sustainable energy projects in Africa". CEF values high standards of environmental awareness and responsibility and executes this value by conducting all activities in a manner that takes into account the health and safety of all persons and that gives due regard to the conservation of the environment. The CEF Group has two core objectives relating to the environment:

1. To invest in and develop renewable and alternative energy sources, which will improve the quality of life for low income households through more affordable and safer energy sources, and invest and develop in energy efficiency.
2. To mitigate against environmental impacts and maximize sustainable development.

#### 2.2.2. NECSA

NECSA is a public owned company, established under the Nuclear Energy Act, 1999. The Act provides for the commercialisation of nuclear and related products and services, and delegates specific responsibilities to NECSA, including the implementation and execution of national safeguards and other internal obligations. With respect to the environment, NECSA is mandated to undertake and promote research and development in the field of nuclear

energy. NECSA's vision is to pursue nuclear technology excellence for sustainable, social and economic development. The core environmental objective is to expand awareness about the Corporation and the Nuclear Industry.

#### 2.2.3. **NERSA**

NERSA is the competent regulatory authority established as a juristic person in terms of Section 3 of the National Energy Regulator Act (2004), which establishes NERSA as the competent authority for electricity (in terms of the Electricity Regulation Act, 2006), gas (in terms of the Gas Act, 2001) and petroleum pipelines regulation (in terms of the Petroleum Pipelines Act, 2003) in South Africa. NERSA's mission is to "regulate the energy industry in accordance with government laws, policies, standards and international best standard in support of sustainable development" and envisions to be a world- class leader in energy regulation. NERSA values "spirit of partnership" that ensures that NERSA delivers on the promises for the purpose of sustainable development.

#### 2.2.4. **NNR**

The NNR was established in terms of the National Nuclear Regulator Act, 1999. The purpose of the Regulator is to provide for the protection of persons, property and the environment against nuclear damage, through the establishment of safety standards and regulatory practices. With respect to the environment, NNR is mandated to provide for the protection of the environment against nuclear damage through the establishment of safety standards and regulatory practices. NNR's mission is to "provide and maintain an effective and efficient national regulatory framework for the protection of persons, property and nuclear damage" and envisions to be an independent world class regulatory authority on nuclear safety.

#### 2.2.5. **PETROSA**

The Petroleum Oil and Gas Corporation of South Africa (SOC) Limited (PetroSA) was formed in 2002 through the merger of Soekor Exploration and Production (Pty) Limited, Mossgas (Pty) Limited and parts of the Strategic Fuel Fund (SFF) and is the country's National Oil Company. PetroSA is a subsidiary of CEF, which is wholly-owned by the State and reports to the DoE. PetroSA extends its mandate extends beyond contributing to the national economy through tax and dividend payments, and includes making a significant contribution towards advancing the broader national strategic objectives. PetroSA's mission is to be the leading provider of hydrocarbons and related quality products by leveraging its proven technologies and harnessing its human capital for the benefit of its stakeholders, with a vision to be the leading African Energy company.

#### 2.2.6. **SANEDI**

SANEDI was established to conduct nationally focused energy research and development, while assisting the Department to achieve its strategic objectives through energy research activities as well as energy efficiency programmes as set out in the National Energy Act, 2008. SANEDI is mandated to direct, monitor & conduct applied energy research & development, demonstration & deployment as well as undertake specific measures to promote Energy Efficiency (EE). Their mandate is aligned with the Departments objectives as outlined in the National Energy Act (2008). The mission of SANEDI is to advance the innovation of clean energy solutions and rational



energy use that effectively supports South Africa's national energy objectives and the transition towards a sustainable low carbon energy future. SANEDI has several core objectives that relate to the environment: The promotion of the green economy and job creation in the country; the develop solutions for sustainable development in the future; to address the country's rising energy demands in areas such as energy efficiency, green transport and advance fossil fuels; the development of smart grids to provide better services to South Africans; help South Africans move towards a low carbon economy and support the accelerated transformation to an economy that is less energy and carbon intensive.

### 2.3. CORE ENVIRONMENTAL MANAGEMENT FUNCTIONS

With reference to Section 2.1 (Mandate) this section provides a brief outline of how this mandate relates to management of the environment as well as a brief description of all the associated functions exercised by the department. This Section also attempts to identify the functions of the DoE that involve the management of the environment and are therefore core to the department's environmental management mandate.

The following functions are the overarching functions of the DoE:

- Develop, maintain and implement an integrated energy policy (Legislation, Regulations, etc.) and planning framework.
- Manage the regulation of petroleum and petroleum products.
- Manage the South African Nuclear Energy industry.
- Manage and facilitate the development of clean energy initiatives.
- Manage, co-ordinate and monitor programmes and projects focused on access to energy.
- Provide cooperative support to the department.
- Provide financial information and supply chain management support to the Department.
- Provide governance and compliance functions to the department and Energy Sector.
- Render ministerial and Parliamentary services.
- Provide audit services for the department.
- Render an administrative and support service to the DG.

The Department has 4 new line function branches that contribute towards executing the Departments functions. The following has been extracted as being the Departments and its State Owned Companies and Entities core environmental functions:

- Improve energy security by planning interventions to expand energy infrastructure by developing a policy framework for the Integrated Energy Plan, the Integrated Resource Plan, the Liquid fuels infrastructure roadmap, the transmission development plan and the Major distribution infrastructure plan over the medium term.

- Address the current and envisaged energy supply and distribution constraints by developing the Approach to Distribution Asset Management (ADAM) Plan for the rehabilitation of critical municipal electricity distribution infrastructure.
- Direct policy development on energy efficiency and departmental environment policy.
- Evaluate the implications of policies and protocols on the energy efficiency and environmental sector.
- Monitor the impact of energy efficiency and environmental policies.
- Ensure the development and transformation of the liquid fuel industry and security of supply of petroleum products in the South African economy through monitoring and enforcing technical and economic compliance to legislation, specifications, standards and licence conditions in each year of the medium term.
- Ensure the efficient management of electricity supply by (1) enhancing the application of project management business principles to assist programme and project managers on an ongoing basis and (2) continually co-ordinate, monitor and report on the implementation of programmes and projects focused on the development, improvement and transformation of energy generation, refinement and transmission, and on the distribution industry and infrastructure.
- Increase public awareness about energy issues while empowering disadvantaged and vulnerable groups by identifying, implementing, managing and co-ordinating upliftment programmes and projects on an ongoing basis.
- Develop and review electricity and energy efficiency regulatory framework.
- Develop and review policies in the electricity sector (i.e. Renewables, electrification etc.).
- Regulate the security of nuclear material, related equipment and facilities by developing, publishing, implementing and reviewing the statutory nuclear framework on an ongoing basis.
- Regulate the security of nuclear material, related equipment and facilities by developing, publishing, implementing and reviewing the statutory nuclear framework on an ongoing basis.
- Ensure the readiness of all relevant stakeholders for the management of any nuclear emergency as part of the national disaster plan on an ongoing basis by (1) Conducting an emergency preparedness review with the International Atomic Energy Agency in order to identify gaps in South Africa's nuclear infrastructure by 2014 and (2) Developing an action plan to address such gaps to bring it in line with the National Nuclear Emergency Management plan by 2015.
- Improve Demand Side Management by facilitating the development of an Energy Management Plan by 2014/2015.
- Ensure the integration of renewable energy into the mainstream energy supply of South Africa by planning and co-ordinating initiatives and interventions focused on the development and improvement of

the renewable market through (1) facilitating the incorporation of the Renewable Energy Policy I the IEP by 2014 and (2) Implementing awareness campaigns from 2013/2014 onwards.

- Ensure the integration of renewable energy into the mainstream energy supply of South Africa.
- Ensure that climate change and environment response measures (mitigation and adaptation) are implemented within the energy sector.
- Fulfil international energy commitments and obligations under the United Nations Framework Convention on Climate Change pertaining to the Kyoto Protocol.
- Mitigate against environmental impacts and maximise sustainable development.
- Liaise with relevant stakeholders on environmental performance and impacts.
- Responsible for building capacity on Carbon Capture Storage (CCS) and implementing Carbon Capture Storage.

Please refer to Annexure D for a complete list of functions of the Department and its SoCs and SoEs.

#### 2.4. STRATEGIC OUTCOMES ORIENTATED GOALS

The DoE has the following Strategic Outcomes- Orientated Goals (SOOG) that contributes towards Governments MDG Outcomes:

1. Security of Supply: To ensure that energy supply is secure and demand well managed.
2. Regulation and competition: To ensure that there is improved energy regulation and competition.
3. Infrastructure: To facilitate an efficient, competitive and responsive energy infrastructure network.
4. Universal access and transformation: To ensure that there is an efficient and diverse energy mix for universal access within a transformed Energy Sector.
5. Environmental Assets: To ensure that environmental assets and natural resources are protected and continually enhanced by cleaner energy technologies.
6. Climate Change: To implement policies that adapt to and mitigate the effects of the climate change.
7. Corporate Governance: To implement good corporate governance for effective and efficient service delivery.

### 3. SECTION 3: LEGISLATIVE FRAMEWORK

Policy and legislation for the energy sector in South Africa responds to a legacy which includes the alienation of energy resources from the majority of the population; inadequate provision for energy services to most citizens; and inadequate environmental management practices. This section aims to provide an overview of the legislative framework within South Africa as well as the legislative mandate applicable to the DoE and its SOCs and SOEs.

#### 3.1. NATIONAL LEGISLATIVE FRAMEWORK FOR ENVIRONMENTAL MANAGEMENT

##### 3.1.1. CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA (1996)

The Constitution is the supreme law of the Republic of South Africa and is founded on the following core values:

- (a) Human dignity, the achievement of equality and the advancement of human rights and freedoms.
- (b) Non-racialism and non-sexism.
- (c) Supremacy of the constitution and the rule of law.
- (d) Universal adult suffrage, a national common voter's roll, regular elections and a multi-party system of democratic government, to ensure accountability, responsiveness and openness.

The Bill of Rights contained in Chapter 2 of the Constitution is a cornerstone of democracy in South Africa. It enshrines the rights of all people in our country and affirms the democratic values of human dignity, equality and freedom. Section 24 of the Bill of Rights deals with environmental rights and requires that 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.

With reference to the constitutional provisions for the integration of environmental management, Sections 40(1)-(2) provides that whilst the South African government consists of distinct national, provincial and local spheres, these spheres are inter-dependant and inter-related and must observe and adhere to the constitutional provisions on co-operative governance. According to Fuggle and Rabie (2009), the constitutional provisions for co-operative governance are especially significant for governance activities relating to the environment as a functional area where national and provincial spheres have concurrent legislative competence. Considering this shared competence it is critical that the legislative commitments are applied and implemented consistently. The EMP is one of the tools to attempt to ensure alignment of these competencies.

### 3.1.2. NATIONAL ENVIRONMENTAL MANAGEMENT ACT (1998)

The NEMA aims to provide for co-operative environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote cooperative governance and procedures for co-ordinating environmental functions exercised by organs of state; to provide for certain aspects of the administration and enforcement of other environmental management laws; and to provide for matters connected therewith. NEMA contains instruments and mechanisms to promote and give effect to the principle of co-operative governance and sets a framework for integrated environmental management in all development activities in the South Africa.

Chapter 1 of the NEMA contains environmental management principles which drive environmental management in South Africa. These principles apply specifically to the actions of organs of state that may significantly affect the environment. The key principles applicable to the DoE's mandate include:

- Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.
- Development must be socially, environmentally and economically sustainable.
- Sustainable development requires the consideration of all relevant factors including the following (extract):
  - That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied;
  - that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;
  - that waste is avoided, or where it cannot be altogether avoided, minimised and reused or recycled where possible and otherwise disposed of in a responsible manner;
  - that the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;
  - that the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;
- Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option.
- Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing must be pursued and special measures may be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination.

- The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.
- Decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law.
- There must be intergovernmental coordination and harmonisation of policies, legislation and actions relating to the environment.

These principles apply throughout the Republic of South Africa to the actions of all organs of state that may significantly affect the environment and:

- (i) shall apply alongside all other appropriate and relevant considerations, including the State's responsibility to respect, protect, promote and fulfil the social and economic rights in chapter 2 of the Constitution and in particular the basic needs of categories of persons disadvantaged by unfair discrimination;
- (ii) serve as the general framework within which environmental management and implementation plans must be formulated;
- (iii) serve as guidelines by reference to which any organ of state must exercise any function when taking any decision in terms of this Act or any statutory provision concerning the protection of the environment; and
- (iv) guide the interpretation, administration and implementation of NEMA, and any other law concerned with the protection or management of the environment.

In addition to the environmental management principles, the NEMA also links to the Constitution by making provision in Chapter 3 for the procedures for co-operative environmental governance- the primary mechanism being the EIP's and EMP's. Section 1.2 of this document provides more detail regarding the NEMA Chapter 3 provisions and obligations.

The NEMA also addresses adherence to the constitutional imperative to respect, protect, promote and fulfil the environmental right contained in the Bill of Rights through normative aspects such as the inclusion of the Duty of Care; the protection of workers refusing to do environmentally hazardous work; providing for the control of emergency incidents; and the requirements regarding environmental authorisations (EA). Section 24 (2) in NEMA, provides for activities which may have a detrimental effect on the environment and may not commence without EA from the competent authority. In Section 24 (4 & 5) provision is made for the Regulations which stipulate the minimum procedures for the issuing of and monitoring compliance with EA. Section 24 (8), states that authorisations or permits obtained under any other law for an activity listed or specified in terms of this Act does not absolve the applicant from obtaining authorisation under this Act.

In accordance with Sections 24 (2) and (D) of the NEMA, the Minister has published (in GNR 544, 545, and 546) a list of activities that require EA prior to commencement of these activities. A list of the specific activities

extracted from that list which may relate to the downstream functions of the DoE and the activities which they are mandated to control can be found in Annexure E.

### 3.2. LEGISLATION ADMINISTERED BY THE DEPARTMENT OF ENERGY AND ITS SOCS AND SOES

#### 3.2.1. THE NATIONAL ENERGY ACT (ACT 34 OF 2008)

The National Energy Act (Act 34 of 2008), provides to ensure that diverse energy resources are available, in sustainable quantities and at affordable prices, to the South African economy in support of economic growth and poverty alleviation, taking into account environmental management requirements and interactions amongst economic sectors; to provide for energy planning, increased generation and consumption of renewable energies, contingency energy supply, holding of strategic energy feedstock's and carriers, adequate investment in, appropriate upkeep and access to energy infrastructure; to provide measures for the furnishing of certain data and information regarding energy demand, supply and generation; to establish an institution to be responsible for promotion of efficient generation and consumption of energy and energy research; and to provide for all matters connected therewith. Importantly, the DoE is mandated to provide for energy planning and measures for the furnishing of certain data and information regarding energy demand, supply and generation.

The Act provides for the establishment of the SANEDI, whose functions include:

1. energy efficiency-
  - (i) undertake energy efficiency measures as directed by the Minister;
  - (ii) increase energy efficiency throughout the economy;
  - (iii) increase the gross domestic product per unit of energy consumed; and
  - (iv) optimise the utilisation of finite energy resources;
2. energy research and development-
  - (i) direct, monitor, conduct and implement energy research and technology development in all fields of energy, other than nuclear energy; and
  - (ii) promote energy research and technology innovation;
  - (iii) provide for-
    - (aa) training and development in the field of energy research and technology development;
    - (bb) establishment and expansion of industries in the field of energy; and
    - (cc) commercialisation of energy technologies resulting from energy research and development programmes;
  - (iv) register patents and intellectual property in its name resulting from its activities;
  - (v) issue licences to other persons for the use of its patents and intellectual property;

- (vi) publish information concerning its objects and functions;
- (vii) establish facilities for the collection and dissemination of information in connection with research, development and innovation;
- (viii) undertake any other energy technology development related activity as directed by the Minister, with the concurrence of the Minister of Science and Technology;
- (ix) promote relevant energy research through cooperation with any entity, institution or person equipped with the relevant skills and expertise within and outside the Republic;
- (x) make grants to educational and scientific institutions in aid of research by their staff or for the establishment of facilities for such research;
- (xi) promote the training of research workers by granting bursaries or grants-in-aid for research;
- (xii) undertake the investigations or research that the Minister, after consultation with the Minister of Science and Technology, may assign to it; and
- (xiii) advise the Minister and the Minister of Science and Technology on research in the field of energy technology.

### 3.2.2. **ELECTRICITY REGULATION ACT (ACT 4 OF 2006)**

The Electricity Regulation Act (Act No 4 of 2006 as amended by Act 28 of 2007), provides for the establishment of a national regulatory framework for the electricity supply industry; to make the NERSA the custodian and enforcer of the national electricity regulatory framework; to provide for licences and registration as the manner in which generation, transmission, distribution, reticulation, trading and the import and export of electricity are regulated; to regulate the reticulation of electricity by municipalities; and to provide for matters connected therewith.

The Objects of the Act are to-

- a) achieve the efficient, effective, sustainable and orderly development and operation of electricity supply infrastructure in South Africa;
- b) 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;
- c) facilitate investment in the electricity supply industry;
- d) facilitate universal access to electricity;
- e) promote the use of diverse energy sources and energy efficiency;
- f) promote competitiveness and customer and end user choice; and



- g) facilitate a fair balance between the interests of customers and end users, licensees, investors in the electricity supply industry and the public.

The Minister of Energy, in terms of Section 34 (1), is empowered to make determinations for the establishment of IPP's for the purpose of greater competition in the electricity generation sector so as to increase the supply of electricity. The Act also introduced a new regulatory framework for the electricity industry, with additional EEDSM obligations to existing licensees. Section 15(1) (u) of the Act requires every licensee to comply with energy efficiency standards and demand side management.

### 3.2.3. **PETROLEUM PRODUCTS ACT (ACT 120 OF 1977)**

The Petroleum Products Act (Act No 120 of 1977 as amended), provides for measures in the saving of petroleum products and an economy in the cost of distribution thereof, and for the maintenance and control of a price therefor, for the furnishing of certain information regarding petroleum products, and for the rendering of services of a particular kind, or services of a particular standard, in connection with petroleum products; to provide for the licensing of persons involved in the manufacturing and sale of certain petroleum products; to promote the transformation of the South African petroleum and liquid fuels industry; to provide for the promulgation of regulations relating to such licences; and to provide for matters incidental thereto.

### 3.2.4. **CENTRAL ENERGY FUND ACT (ACT 38 OF 1977)**

The Central Energy Fund Act (Act 38 of 1977) provides for the payment of certain moneys into the Central Energy Fund and for the utilization and investment thereof; for the imposition of a levy on fuel and for the utilization and investment thereof; for the control of the affairs of CEF (Proprietary) Limited by a board of directors; for the keeping of records of all transactions entered into for account of the Central Energy Fund or the Equalization Fund and of certain other transactions; for the investigation, examination and auditing of the books, accounts and statements kept and prepared in connection with the said transactions; and for the submission to Parliament of a report relating to the said investigation, examination and auditing; and to provide for matters connected therewith.

### 3.2.5. **NUCLEAR ENERGY ACT (ACT 46 OF 1999)**

The Nuclear Energy Act (Act 46 of 1999), provides for the establishment of the South African Nuclear Energy Corporation Limited, a public company wholly owned by the State (the "Corporation"), to define the Corporation's functions and powers and its financial and operational accountability, and provide for its governance and management by a board of directors and a chief executive officer; to provide for responsibilities for the implementation and application of the Safeguards Agreement and any additional protocols entered into by the Republic and the International Atomic Energy Agency in support of the Nuclear Non-Proliferation Treaty acceded to by the Republic; to regulate the acquisition and possession of nuclear fuel, certain nuclear and related material and certain related equipment, as well as the importation and exportation of, and certain other acts and activities relating to, that fuel, material and equipment in order to comply with the international obligations of the Republic; to prescribe measures regarding the discarding of radioactive waste and the storage of irradiated nuclear fuel; and to provide for incidental matters.

The Act provides for the establishment and governance of the NECSA, whose functions are to:

- a) to undertake and promote research and development in the field of nuclear energy and radiation sciences and technology and, subject to the Safeguards Agreement, to make these generally available;
- b) to process source material, special nuclear material and restricted material and to reprocess and enrich source material and nuclear material; and
- c) to co-operate with any person or institution in matters falling within these functions subject to the approval of the Minister.

### 3.2.6. NATIONAL NUCLEAR REGULATOR ACT (ACT NO 47 OF 1999)

The National Nuclear Regulator Act (Act 47 of 1999), provides for the establishment of a NNR in order to regulate nuclear activities, for its objects and functions, for the manner in which it is to be managed and for its staff matters; to provide for safety standards and regulatory practices for protection of persons, property and the environment against nuclear damage; and to provide for matters connected therewith.

The Act provides for the establishment and governance of the NNR, whose objective includes:

- a) provide for the protection of persons, property and the environment against nuclear damage through the establishment of safety standards and regulatory practices;
- b) exercise regulatory control related to safety over:
  - (i) the siting, design, construction, operation, manufacture of component 40 parts. and decontamination, decommissioning and closure of nuclear installations; and
  - (ii) vessels propelled by nuclear power or having radioactive material on board which is capable of causing nuclear damage, through the granting of nuclear authorisations
- c) exercise regulatory control over other actions, to which this Act applies, through the granting of nuclear authorisations;
- d) provide assurance of compliance with the conditions of nuclear authorisations through the implementation of a system of compliance inspections;
- e) fulfil national obligations in respect of international legal instruments SO concerning nuclear safety; and
- f) ensure that provisions for nuclear emergency planning are in place.

### 3.2.7. NATIONAL RADIOACTIVE WASTE DISPOSAL INSTITUTE ACT (ACT 53 OF 2008)

The National Radioactive Waste Disposal Institute Act (Act 53 of 2008), provides for the establishment of a National Radioactive Waste Disposal Institute (referred to as the National Radioactive Waste Management Agency in the past policy and strategy documents) in order to manage radioactive waste disposal on a national basis; to provide for its functions and for the manner in which it is to be managed; to regulate its staff matters; and to provide for matters connected therewith.

The Act provides for the establishment of the NRWDI, whose functions are to:

- a) perform any function that may be assigned to it by the Minister in terms of Section 55(2) of the Nuclear Energy Act, 1999, (Act No. 46 of 1999), in relation to radioactive waste disposal;
- b) design and implement disposal solutions for all classes of radioactive waste;
- c) develop radioactive waste acceptance and disposal criteria in compliance with applicable regulatory health safety environmental requirements and any other technical and operational requirements;
- d) assess and inspect the acceptability of radioactive waste for disposal and issue radioactive waste disposal certificates;
- e) manage, operate and monitor operational radioactive waste disposal facilities, including related storage and predisposal management of radioactive waste at disposal sites;
- f) manage and monitor closed radioactive waste disposal facilities;
- g) investigate the need for any new radioactive waste disposal facilities and site;
- h) design and construct such new facilities as may be required;
- i) conduct research and develop plans for the long-term management of radioactive waste storage and disposal;
- j) maintain a national radioactive waste database and publish a report on the inventory and location of all radioactive waste in the Republic at a frequency determined by the board;
- k) manage the disposal of any ownerless radioactive waste on behalf of the State, including the development of radioactive waste management plans for such waste;
- l) assist generators of small quantities of radioactive waste in all technical aspects related to the disposal of such waste;
- m) implement any assignments or directives from the Minister regarding radioactive waste disposal;
- n) provide information on all aspects of radioactive waste disposal to the public in general, living in the vicinity of radioactive waste disposal facilities;
- o) co-operate with any person or institution on matters relating to the performance of any duty contemplated in this section falling within these functions; and
- p) perform any other function necessary to achieve the objects of this Act.

### 3.2.8. NATIONAL ENERGY REGULATOR ACT (ACT 40 OF 2004)

The National Energy Regulator Act (Act 40 of 2004), provides for the establishment of a single regulator to regulate the electricity, piped-gas and petroleum pipeline industries; and to provide for matters connected therewith. The Act provides for the establishment of the NERSA, whose functions are to:

- a) undertake the functions of the Gas Regulator as set out in Section 4 of the Gas Act;
- b) undertake the functions of the Petroleum Pipelines Regulatory Authority as set out in Section 4 of the Petroleum Pipelines Act; and
- c) undertake the functions set out in Section 4 of the Electricity Regulation Act, 2006.

3.2.9. **THE GAS ACT (ACT 48 OF 2001)**

The Gas Act (Act 48 of 2001) aims to promote the orderly development of the piped gas industry; to establish a national regulatory framework; to establish a National Gas Regulator as the custodian and enforcer of the national regulatory framework; and to provide for matters connected therewith.

## 4. SECTION 4: OVERVIEW OF DEPARTMENTAL POLICIES, PLANS AND PROGRAMMES

This section presents the relevant commitments of the DoE with specific reference to norms, standards, policies, plans and programmes (as well as other documentation), which relate to their environmental management functions.

### 4.1. PROGRAMMES OF THE DEPARTMENT

The DoE's undertakes its mandate under the direction of the Director-General through the following the programmes (Department of Energy, 2014):

- Administration;
- Energy policy and planning;
- Petroleum and petroleum products regulation;
- Nuclear energy;
- Clean energy;
- Energy programmes and projects;
- Corporate services;
- Financial management; and
- Governance and compliance.

The following sub-sections listed below provide further detail on the purpose of each Programme and the strategic objectives it aims to achieve.

#### 4.1.1. ADMINISTRATION PROGRAMME

The purpose of this programme is to provide the Ministry and the Department with strategic support and management services. The programme is split into several sub-programmes to support the strategic objectives and function of the programmes. These sub-programmes include support to the ministry, support to the DG and DDGs, financial administration, audit services, corporate services and office accommodation. The Administrative Programme consists of four primary strategic objectives:

- Finance and Supply Chain Management, with the functions to provide financial management, accounting and supply chain and asset management services to the DoE.
- Corporate Support, with the function of the provision of corporate support to the DoE.
- Governance and Compliance, with the function to ensure good corporate governance and compliance by the DoE and SOEs.

- International Coordination, with the function to provide support to the Minister, Deputy Minister, DG, DoE and Energy Sector with their international engagements and obligations.

#### 4.1.2. ENERGY POLICY AND PLANNING

The purpose of the programme is to ensure evidence planning, policy setting and investment decisions in the Energy sector to improve security of energy supply, regulation and competition. The programme is split into several sub-programmes, namely policy analysis and research, energy planning, hydrocarbon policy, electricity and alternative energy policy. The programme outlines 7 primary objectives to ensure energy security:

- Demand management with the function to improve energy security by regulating the demand and introducing a diversified mix of energy generation technologies.
- Competition to improve energy security by improving efficiency through competition in the Energy Sector.
- Energy policy with the function to improve energy security by developing key indicators to effectively monitor the Energy Sector policies on an on-going basis.
- Energy planning with the function to improve energy security by planning interventions to expand energy infrastructure by developing a policy framework for the Integrated Energy Plan (IEP), the Integrated Resource Plan (IRP), the Liquid fuels infrastructure roadmap, the transmission development plan and the Major distribution infrastructure plan over the medium term.
- Energy Publications with the function to improve energy security by publishing an annual energy statistics report to facilitate information-based decision making.
- Distribution Asset Management Plan, with the function to address current and envisaged energy supply and distribution constraints by developing the Approach to Distribution Asset Management (ADAM) Plan for the rehabilitation of critical municipal electricity distribution infrastructure.

#### 4.1.3. PETROLEUM AND PETROLEUM PRODUCTS REGULATION BRANCH

The purpose of the programme is to manage the regulation of petroleum and petroleum products to ensure optimum and orderly functioning of the petroleum industry to achieve governments' development goals. Specific sub-programmes with the programme are petroleum compliance, monitoring and enforcement, petroleum licensing and fuel supply, fuel pricing and regional petroleum regulation offices. The following 3 strategic objectives are outlined by the programme:

- Compliance and Monitoring Enforcement to ensure development and transformation of the liquid fuel industry and security of supply of petroleum products in the South African economy through monitoring and enforcing technical and economic compliance to legislation, specifications, standards and licence conditions in each year of the medium term.

- Petroleum Licensing to provide the function of facilitation of participation of the Historically Disadvantaged Individuals (HDIs) in the petroleum sector by enforcing compliance by wholesalers, manufacturers and retailers with the liquid fuels charter in the adjudication of licences on an ongoing basis.
- Fuel Price Regulation: Strengthen the regulatory framework in the liquid fuels petroleum industry by implementing the Regulatory Accounting System (RAS) to have a transparent fuel pricing mechanism that will reward investors in the liquid fuels sector through the value chain, by 2013/2014.

PetroSA falls within the Nuclear Energy Programme.

#### 4.1.4. **ELECTRIFICATION AND ENERGY PROGRAMME AND PROJECT MANAGEMENT**

The purpose of the programme is to manage, co-ordinate and monitor programmes and projects focused on access to energy. The programme consists of 5 sub-programmes namely the Integrated National Electrification Programme (INEP), Energy Regional office, Programme and projects management office, Electricity infrastructure/industry transformation and Community upliftment programmes and project. The programme will aim to meet three strategic objectives:

- Integrated National Electrification Programme (INEP) with the function to increase access to electricity by implementing and monitoring the INEP, which aims to electrify an additional 890000 (grid and non-grid) households by 2016/2017.
- Project Management and Electricity Industry/ Infrastructure Transformation to ensure the efficient management of electricity supply by (1) enhancing the application of project management business principles to assist programme and project managers on an ongoing basis and (2) continually co-ordinate, monitor and report on the implementation of programmes and projects focused on the development, improvement and transformation of energy generation, refinement and transmission, and on the distribution industry and infrastructure.
- Community upliftment to provide the function of increasing public awareness about energy issues while empowering disadvantaged and vulnerable groups by identifying, implementing, managing and co-ordinating upliftment programmes and projects on an ongoing basis.

NERSA falls within the Nuclear Energy Programme.

#### 4.1.5. **NUCLEAR ENERGY**

The purpose of the Nuclear Energy programme is to manage the South African Nuclear energy industry and control nuclear material in terms of international obligations, nuclear legislation and policies to ensure the safe and peaceful use of nuclear energy. Three sub-programmes are highlighted by the programme namely, Nuclear safety and technology, nuclear non-proliferation and radiation security and nuclear policy. Six strategic objectives are outline for the project:

- Nuclear Security with the function to regulate the security of nuclear material, related equipment and facilities by developing, publishing, implementing and reviewing the statutory nuclear framework on an ongoing basis.
- Nuclear Control and Accounting; to strengthen the control of, and accounting for, nuclear materials and related equipment by enforcing relevant regulations and statutory frameworks on an ongoing basis.
- Radioactive waste management that will ensure safe, secure and sustainable management and disposal of radioactive waste by facilitating the full operation of the National Radioactive Waste Disposal Institute (NRWDI), and establishing a waste disposal fund by 2015.
- Nuclear Energy Expansion Programme that will contribute towards ensuring the security of energy supply by leading, developing and overseeing the implementation of the nuclear energy expansion programme as guided by the Nuclear Energy Policy and the decision of the National Nuclear Energy Executive Co-ordination Committee (NNEECC) of October 2013, in accordance with timelines stipulated in the Integrated Resource Plan (IRP) 2010-2030.
- Nuclear Compliance with the function of ensuring compliance with international nuclear obligations by developing, maintaining and implementing an appropriate statutory framework for Nuclear Policy by 2016.
- Nuclear Emergency Management that will perform the function of ensuring the readiness of all relevant stakeholders for the management of any nuclear emergency as part of the national disaster plan on an ongoing basis by (1) Conducting an emergency preparedness review with the International Atomic Energy Agency (IAEA) in order to identify gaps in South Africa's nuclear infrastructure by 2014 and (2) Developing an action plan to address such gaps to bring it in line with the National Nuclear Emergency Management plan by 2015.

NECSA and the NNR falls within the Nuclear Energy Programme.

#### 4.1.6. **CLEAN ENERGY**

The purpose of the programme aims to manage and facilitate the development and implementation of clean and renewable energy initiatives, as well as energy efficiency and demand side management initiatives. The programme is split into three sub-programmes namely, energy efficiency, renewable energy and climate change and designated national authority. The programme identifies four strategic objectives:

- Climate Change and the Environment with the function to manage climate change and environmental matter by (1) developing and implementing Climate Change Policies, (2) developing the green economy and mitigating the risk of adverse environmental impact on an ongoing basis and (3) publishing climate change strategies and plans by 2014/2015.
- Energy efficiency and demand side management (EEDSM) with the function to promote and facilitate EEDSM by (1) Planning and developing interventions to increase energy savings on an ongoing basis, (2)



develop policies to increase the impact of EEDSM Strategies by 2015 and (3) to develop incentive schemes like the energy efficiency tax incentive by 2014/2015.

- Energy Management Plan with the function to improve Demand Side Management by facilitating the development of an Energy Management Plan by 2014/2015.
- Renewable Energy with the function of ensuring the integration of renewable energy into the mainstream energy supply of South Africa by planning and co-ordinating initiatives and interventions focused on the development and improvement of the renewable market through (1) facilitating the incorporation of the Renewable Energy Policy I and the Integrated Energy Plan (IEP) by 2014 and (2) Implementing awareness campaigns from 2013/2014 onwards.

SANEDI falls within the Nuclear Energy Programme.

#### 4.2. PRINCIPLES FOR SUSTAINABLE DEVELOPMENT

Sustainable development can be defined as 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. The principles of sustainable development are reflected in the legislation or policies which are implemented or applied by the DoE and its SOCs/SOEs or which guide the work of the DoE and its SOCs/SOEs. The statutes or co-operations based on these principles include the Environmental Management Policy, 1998; the National Energy Act, 2008; the National Environmental Management Act, 1998; Clean Development Mechanism, 2004 and the Green Economy Accord, 2011. Listed below are selected Sustainable Development principles which are being applied through the DOE's policies, plans and programmes:

- Duty of Care: This is also known as the environmental responsibility principle. It imposes the duty of acting with due care so that damage to others and the environment is avoided. Those who make, supply, import or use material are held responsible for providing sufficient information on its manufacture and intended use, so that the risks of such material to health and environment can be evaluated. The "cradle to grave" principle reflects this by stipulating that any entity that generates waste has a final responsibility for ensuring that such waste is safely disposed.
- Precautionary principle: This principle promotes a cautious and risk-averse approach to the use of resources especially where scientific information is insufficient to accurately indicate the possible impacts of such use.
  - The REIPP Programme includes as part of its application process the need to carry out EIA's for all proposed projects in accordance with the NEMA requirements.
  - All development projects that are undertaken by the SOCs and SOEs will carry out EIA's and obtain other environmental permits and authorisations as applicable (e.g. EIA for the Solar Park Project).

- The National Radioactive Waste Management Policy aims to apply the precautionary principle in that where there are threats of serious irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.
- Inter-generational equality: This means that no generation should increase its wealth, or generally benefit, from their utilisation of resources, if this will prejudice the subsequent generations enjoying a similar quality of life.
  - The DNA assesses potential CDM Projects, which in turn are critical to South Africa meeting the national sustainable development objectives.
  - The Departments Energy Efficiency and Demand Side Management Programme is critical to ensuring responsible resource use and inter-generational equality.
  - The REIPPP programme aims to facilitate cleaner renewable energy to drive more responsible and sustainable energy sources.
- Polluter pays: According to this principle, the polluter pays the costs of reducing pollution that does damage to society, or that exceeds an acceptable level. Polluters are therefore required to assume individual responsibility for the environmental impacts that they cause. This also applies to accidental pollution, where the polluter bears strict liability, and is responsible for the safe handling and environmentally sound disposal of any material that is produced.
  - The department applies this principle through the control of the content of certain fuel products used on a large scale in South Africa. For instance the Department through its legislative mandate to control petroleum products is driving cleaner fuels and consequently reduced pollution.
  - The National Radioactive Waste Management Policy requires: that radioactive waste shall be managed in such a way as to provide an acceptable level of protection of the environment; and the financial burden for the management of radioactive waste shall be borne by the generator of that waste.
- Intra-generational equality: This is concerned with ensuring a fair distribution of the benefits and impacts of development within a generation, regardless of class, ethnicity, gender or any other social grouping status.
  - The Department through the Integrated Energy Plan (IEP) is striving to achieve universal access to clean and affordable energy, in an effort to address the imbalances of the past.
- Public trust doctrine: It places a duty on the State to hold environmental resources in trust for the benefit of the public.

- The Department REIPP programme aims to manage the renewable energy resources of the country to ensure that the current and future generations benefit from these public resources.
- Proximity principle: This requires the treatment and disposal of hazardous waste to take place at the closest possible location to its source, in order to minimize risks associated with its transport.
  - Radioactive Waste Management Policy considers this principle.

Detail on the Departments Policies, Plans and Programmes and how they relate to the concept of sustainable development are provided in Section 4.4.

### 4.3. APPLICABLE ENVIRONMENTAL NORMS AND STANDARDS

In this section a list of all the norms and standards prescribed by the DoE for environmental management purposes, together with a brief description of their nature and applicability are identified. This section also identifies other norms and standards which may be administered by another authority or entity, but which may apply to the functions and actions of the DoE and its SOCs and SOEs. The DoE applies standards, norms and criteria aimed at ensuring compliance with policy and legislation which promote sustainable development. Environmental standards, norms and criteria are normally reflected in statutory regulations. Table 1 provides a list of the norms and standards set or applied by the DoE and its SOCs and SOEs in so far as they relate to their environmental management functions.

It is important to note that there are also other environmental ambient standards and regulations which provide numerical limits or threshold values to which industrial operations must be designed, operated and managed. These standards relate to effluent discharge, air emissions and/or workplace air quality, noise emissions or exposure, waste disposal, human exposure to dust, toxic chemicals or radioactivity. Many of these norms, standards and regulations do not apply directly to, or are not directly administered by the DoE and /or its SOCs and SOE's. This section has specifically tried to focus only on the environmental norms, standards and regulations that are set or directly applied by the DoE and its SOCs and SOEs.

Table 1 provides details for core norms and standards that relate to environmental management. A summary of this table is listed below:

- Safety Standards and Regulatory Practices (SSRP): Provides criteria for safety standards and regulatory practices for the protection of persons, property and the environment against nuclear damage.
- Requirements to Establish a Public Safety and Information Forum (PSIF) for Nuclear Installations: Requirements to establish a Public Safety and Information Forum.
- Regulations on the content of the annual public report on the environment related to nuclear installations: Provides requirements provides for contents of annual public meetings report on the health and safety related to workers, the public and the environment on nuclear installation sites.
- Regulations on licencing of new sites for new nuclear installations : requirements for applications for nuclear installations

- Regulations on the development surrounding any nuclear installation to ensure effective implementation of any nuclear emergency plan: Requirements relating to the control and/or monitoring of development within the formal emergency planning zone surrounding a specific nuclear installation
- Determination of the level of radioactivity, below which the Nuclear Energy Act doesn't apply: Regulations for determining the level of radioactivity below which the Act does not apply
- Regulations Declaration of Certain Substances, Materials and Equipment as Restricted Material, Source Material, Special Nuclear Material and Nuclear Related Equipment and Material: Declaration of certain substances, materials and equipment as restricted material, source material, special nuclear material and nuclear related equipment and material.
- Electricity Regulations for compulsory norms: Regulations for maintaining a good quality of supply and ensuring stability of the electricity network.
- Electricity regulations on the Integrated Resource Plan 2010-2030: Scoring criteria used to prepare the IRP.
- REFIT Guidelines: Regulatory guidelines for the Renewable Energy Feed-in Tariff (REFIT).
- Regulations regarding petroleum and petroleum products specifications and standards: Specifications and standards for petroleum products that may be sold for consumption in South Africa.
- Regulations Regarding the Mandatory Blending of Biofuels with Petrol and Diesel: Regulations regarding the mandatory blending of bio-ethanol or biodiesel with petroleum petrol or petroleum diesel, respectively, to produce a biofuel blend intended for resale.
- Petroleum Pipelines Act Regulations: Regulations to identify and manage any potential environmental liability associated with the rehabilitation of a licensed activity.
- Regulations in Terms of Section 12l of the Income Tax Act, 1962, On the Allowance for Energy Efficiency Savings: Regulations devised to encourage the efficient utilisation of energy.
- Regulations for the Establishment of a Designated National Authority for the Clean Development Mechanism: Regulations allowing for the establishment of the Designated National Authority.
- National Environmental Management Air Quality Act, 2004: Regulations to provide for national, provincial and local ambient air quality and emission standards.

TABLE 1: DEPARTMENTAL REGULATIONS, NORMS, AND STANDARDS RELATED TO ENVIRONMENTAL MANAGEMENT

List	Administered by:	Core Environmental Objectives	Date of commencement/ implementation
National Nuclear Regulator Act 47 of 1999: Safety Standards and Regulatory Practices (SSRP)	NNR/ DoL	<p>These regulations provide criteria for safety standards referred to in the Act with regards to-</p> <ul style="list-style-type: none"> <li>• Specifies safety standards and regulatory practices for protection of persons, property and the environment against nuclear damage.</li> <li>• Provides radiation protection and nuclear safety requirements applicable to nuclear installations (including dose limits, risk and safety assessments, engineering practices, planning and programmes, emergency planning and preparedness, inspections, etc.). The regulations make specific reference to the intention to keep exposures as low as reasonably achievable (ALARA).</li> <li>• Section 4.6 includes a requirement for management of radioactive wastes and the requirement for a waste management programme.</li> <li>• Section 4.7 requires that an appropriate environmental monitoring and surveillance programme be established, implemented and maintained.</li> </ul>	Promulgated GG 28755 of 28 April 2006.
National Nuclear Regulator Act 47 of 1999: Requirement to Establish a Public Safety and Information Forum for Nuclear Installations.	NNR	<ul style="list-style-type: none"> <li>• Provides for the requirement for the holder of a nuclear installation licence to establish a Public Safety and Information Forum (PSIF).</li> <li>• The PSIF is required to inform relevant members of the public on nuclear safety and radiation safety matters pertaining to the relevant nuclear installation. The definition of nuclear and radiation safety includes prevention of damage to, and protection of, the environment.</li> <li>• Includes a requirement for the PSIF to invite representatives from the relevant local, provincial and national governments.</li> </ul>	Published in GG 26112 of 12 March 2004.
National Nuclear Regulator Act 47 of 1999: Regulations on the content of the annual public report on the environment related to nuclear installations.	NNR	<ul style="list-style-type: none"> <li>• Provides requirements for the contents of the annual public report on the health and safety related to workers, the public and the environment related to all sites on which a nuclear installation is situated or on which any action which is capable of causing nuclear damage is carried out.</li> <li>• In terms of content the regulations require, amongst others, a section detailing aspects applicable to environmental protection (control of radioactive discharges to the environment and environmental surveillance programme).</li> </ul>	Published GG 29050 of 28 July 2006
National Nuclear Regulator Act 47 of 1999: Regulations on licencing of new sites for new nuclear installations.	NNR	<ul style="list-style-type: none"> <li>• The purpose of these Regulations is to establish requirements for applications for nuclear installation site licences for siting.</li> <li>• The regulations include the requirement for a site safety report which in turn requires a source term analysis that is representative of the overall potential hazards posed to the public and the environment owing to the new nuclear installation(s).</li> <li>• An analysis to demonstrate the viability of an emergency plan, including description of disaster management infrastructure. Disaster management infrastructure relates to the infrastructure required to implement an emergency plan to ensure protection of the</li> </ul>	GG 34735 of 11 November 2011.

List	Administered by:	Core Environmental Objectives	Date of commencement/ implementation
National Nuclear Regulator Act 47 of 1999: Regulations on the development surrounding any nuclear installation to ensure the effective implementation of any nuclear emergency plan.	NNR/ Provincial and Municipal Authorities	<p>environment.</p> <ul style="list-style-type: none"> <li>The regulations require that the Regulator shall lay down, where appropriate, specific requirements relating to the control and/or monitoring of development within the formal emergency planning zone surrounding a specific nuclear installation, after consultation with the relevant provincial and/or municipal authorities and to ensure the effective implementation of any nuclear emergency plan.</li> </ul>	GG 26121 of 5 March 2004.
Nuclear Energy Act 131 of 1993- Determination of the level of radioactivity, below which the Act doesn't apply.	DoE	<ul style="list-style-type: none"> <li>To set the level of radioactivity and dose below which can be declared as falling outside of the scope of the Act-               <ol style="list-style-type: none"> <li>(1) (a) 100 becquerels per gram as the level of the specific activity of radioactive material;</li> <li>(b) 10 x 103 becquerels as the level of the total activity of radioactive material involved over a period of one year; and</li> <li>(c) one millisievert per year as the radiation dose,</li> </ol>               with reference to which the Council for Nuclear Safety may issue a declaration in terms of section 51 (1) (b) (i) of the Act; and             </li> <li>(2) 0,2 becquerels per gram as the level of the specific activity of each radioactive nuclide in radioactive material below which the provisions of the Act do not apply.</li> </ul>	Government Notice R848 in Government Gazette 15670 of 23 April 1994 and amended by: GN 904 in GG 15716 of 13 May 1994
Nuclear Energy Act 46 of 1999- Regulations Declaration Of Certain Substances, Materials And Equipment As Restricted Material, Source Material, Special Nuclear Material And Nuclear Related Equipment And Material	DoE	<ul style="list-style-type: none"> <li>Declaration of certain substances, materials and equipment as restricted material, source material, special nuclear material and nuclear related equipment and material.</li> </ul>	Government Notice 207 in Government Gazette 31954 of 27 February 2009.
Electricity Regulation Act 4 of 2006- Electricity regulations for compulsory norms and standards for reticulation services.	NERSA	<ul style="list-style-type: none"> <li>These Norms and Standards aim to maintain good quality of supply, to ensure stability of the electricity network, and to minimise electricity load shedding and to avoid blackouts.</li> <li>Section 2 requires that energy efficient lighting fittings must be used in all buildings except where a specific fitting is required for some purpose and the nature of the purpose does not allow an energy efficient fitting. It further requires that street and</li> </ul>	GG 31250 of 18 July 2008 and amended by : GG 31436 of 17 September 2008

List	Administered by:	Core Environmental Objectives	Date of commencement/ implementation
Electricity Regulation Act 4 of 2006- Electricity Regulations on the Integrated Resource Plan 2010 - 2030	DoE	<p>highway lighting must be energy efficient and licensee must ensure that it is switched off during the day.</p> <ul style="list-style-type: none"> <li>The Integrated Resource Plan (IRP) is a living plan that is expected to be continuously revised and updated as necessitated by changing circumstances. The IRP lays out the proposed generation new build fleet for South Africa for the period 2010 to 2030.</li> <li>This Policy-Adjusted IRP is regarded as a major step towards building local industry clusters and assists in fulfilling South Africa's commitments to mitigating climate change as expressed at the Copenhagen climate change summit.</li> <li>The scoring criteria utilised to prepare the IRP included consideration of Climate change mitigation: The Department of Environmental Affairs "Long Term Mitigation Strategy" (LTMS) provides guidance on the extent to which greenhouse gas (GHG) emissions should be restricted over time. For the purposes of the IRP the GHG emissions from existing and planned generation capacity can be quantified in the model and compared between scenarios. While certain scenarios may impose a specific limit to emissions, this criterion compares the actual emissions between all scenarios.</li> <li>Appendix E of the IRP includes the Medium Term Risk Mitigation Project for Electricity in South Africa (2010 To 2016). This project will be implemented as a partnership between Government, Business, Labour, Civil Society and Eskom.</li> </ul>	GG 34263 of 6 May 2011.
National Energy Regulator Act 40 of 2004- REFIT Guidelines	NERSA	<ul style="list-style-type: none"> <li>This document provides regulatory guidelines for the Renewable Energy Feed-in Tariff (REFIT) and has been developed by NERSA in response to national policy direction.</li> <li>The REFIT is a mechanism to promote the deployment of renewable energy. Renewable energy is recognised internationally as a major contributor in protecting our climate, nature, and the environment as well as providing a wide range of environmental, economic and social benefits that will contribute towards long term global sustainability.</li> <li>The uptake of renewable energy offers the opportunity to address energy needs in an environmentally responsible manner, contributing to the mitigation of climate change through the reduction of greenhouse gas emissions. South Africa as a nation is estimated to be responsible for 1 percent of global GHG emissions and is currently ranked 9th worldwide in terms of per capita CO2 emissions. The development of proper incentives to promote renewable energy is a key component in taking ambitious actions to mitigate climate change, an objective put forward by the South African delegation to the Bali Conference of the Parties in December 2007.</li> </ul>	GG 32122 of 17 April 2009
Petroleum Products Act, Act 120 of 1977- Regulations Regarding Petroleum Products Specifications and Standards	DoE: DDG Petroleum and Petroleum Products Regulation (nominated as th	<ul style="list-style-type: none"> <li>These regulations set out specifications and standards for petroleum products that may be sold for consumption in South Africa. The specifications and standard include allowable sulphur content in diesel and metal content in petrol. Metal and sulphur content in petrol and diesel respectively have a direct impact on air emissions and pollution. Reference is specifically made to SANS 1598 and 342 for petrol and diesel respectively.</li> </ul>	GG 28958 of 23 June 2006

List	Administered by:	Core Environmental Objectives	Date of commencement/ implementation
Petroleum Products Act, Act 120 of 1977- Regulations Regarding The Mandatory Blending of Biofuels with Petrol and Diesel.	DoE: DDG Petroleum and Petroleum Products Regulation (nominated as the Controller of Petroleum Products).	Internationally, the growth of the biofuels industry has been driven by a number of factors which includes: the support for renewable energy, support for cleaner and environmentally friendly energy sources in a bid to limit global warming; upliftment of the agricultural sector (through utilisation of surplus agricultural land to produce products in excess of food needs); promotion of sustainable development, exertion of downward pressure on global crude oil prices and the need to improve energy security. These Regulations regulate the mandatory blending of bio-ethanol or biodiesel with petroleum petrol or petroleum diesel, respectively, to produce a biofuel blend that may be sold in the Republic.	35623 of 23 August 2012 (- not yet in effect).
Petroleum Pipelines Act, Act 60 of 2003- Regulations	DoE NERSA	These regulations apply to licenses issued under the Petroleum Pipelines Act. Of specific relevance is a section that deals with conditions that have to be met prior to any licences activity being abandoned, relinquished or terminated. The core objective is to identify and manage any potential environmental liability associated with the rehabilitation of a licenced activity. The regulations specifically require the licensee to: <ul style="list-style-type: none"> <li>• Submit to the authority a plan for approval for the closure, removal and disposal (alternatives, decommissioning activities, clean-up and disposal of dangerous materials and chemicals; and compile and EIA.</li> <li>• Provide financial security for rehabilitation where necessary.</li> <li>• Provide a certificate from an independent environmental consultant confirming termination of financial security arrangement.</li> </ul>	GG 30905 of 4 April 2008
Regulations in Terms of Section 12L of the Income Tax Act, 1962, On the Allowance for Energy Efficiency Savings	SANEDI	These regulations arise from the need to promote the efficient utilisation of energy to safeguard the continued supply of energy and to combat the adverse effects of greenhouse gas emissions related to fossil fuel based energy use on climate change; and since energy efficiency saving may be considered as a potentially successful method to guarantee the efficient utilisation of energy; and since the intended purpose of a carbon tax is to mitigate greenhouse gas emissions and also to utilise (recycle) some of the revenue to be generated from such a tax to finance incentives to advance the further efficient utilisation of energy; therefore a tax incentive as contained in section 12L of the Income Tax Act, 1962, and these Regulations is devised to encourage the efficient utilisation of energy. SANEDI has been designated under the Act as being responsible for : <ul style="list-style-type: none"> <li>• Considering reports submitted under the regulations comply with the regulations and the standard to ensure that these represent an accurate reflection of the energy efficiency savings being claimed by a third party.</li> <li>• Issue a Certificate for energy efficiency savings that can be used to claim a tax incentive.</li> </ul>	GG 37136 of 9 December 2013 (came into effect on 1 November 2013)
<b>National</b>	DoE: Air Quality	<ul style="list-style-type: none"> <li>• National Standards: The Minister, by notice in the Gazette, set national ambient air</li> </ul>	GG 27318 of 24 February 2005



List	Administered by:	Core Environmental Objectives	Date of commencement/ implementation
<p><b>Environmental Management Air Quality Act, Act 39 of 2004</b></p>	<p>Management Chief Directorate</p>	<p>quality and emission standards from point, non-point and mobile sources.</p> <ul style="list-style-type: none"> <li>• Provincial Standards: The MEC, may by notice in the Gazette, establish provincial standards for ambient air quality including the permissible amount or concentration of each substance or mixture in ambient air from point, non-point or mobile sources in the province or geographical area within the province.</li> <li>• Local Standards: A municipality may in terms of a by-law establish local standards for emissions from point, non-point or mobile sources in the municipality.</li> </ul> <p>Section 15 details that in terms of Chapter 3 of NEMA, that every department or province responsible for preparing an EIP or EMP must include in that plan an air quality management plan.</p>	
<p>National Environmental Management Act, Act 107 of 1998- Regulations for the Establishment of a Designated National Authority for the Clean Development Mechanism</p>	<p>DoE</p>	<p>Regulations were promulgated under Section 25 of the NEMA establishing the Designated National Authority (DNA). These regulations established the DNA within the DoE and provides the DNA with its legal mandate to oversee the Clean Development Mechanism (CDM) in South Africa. CDM is a flexible mechanism under the Kyoto Protocol of the UNFCCC that provides a practical framework to reduce or stabilize GHG's that cause global warming and climate change. CDM projects generate carbon credits with a monetary value that could result in additional financial resources flow to a developing country allowing it to implement a GHG emissions reduction programme.</p> <p>The main task of the DNA is to assess potential CDM projects to determine whether they will assist South Africa in achieving its sustainable development goals and to issue formal host country approval where this is the case. The DNA for South Africa was established in late 2004.</p>	<p>GG 27788 of 22 July 2005</p>

#### 4.4. APPLICABLE POLICIES, PLANS AND PROGRAMMES

*"The National Development Plan (NDP) has elevated the role of energy in the country's economic growth and development. This role, as envisaged in the NDP, ensures that by 2030 South Africa has an energy sector that promotes economic growth and development, social equity through expanded access to energy services and environmental sustainability through efforts to reduce pollution and mitigate the effects of climate change.*

*To realise this vision, South Africa's energy systems need to be supported by effective policies, institutions, governance systems, regulation and competitive markets. We need to ensure that there is security of energy supply and adequate infrastructure (generation, transmission and distribution) in order to support economic development. This requires substantial investment in the energy sector.*

*Over the past five years, the Department of Energy has been engaged in the review, and introduction of energy policies, regulations and plans to ensure that they enable the energy sector to provide the growth stimulus needed in South Africa. As part of the Department's 2014/15 medium-term planning process, the Department has ensured that as we introduce, revise and finalise our policies, regulations and plans, we incorporate the NDP provisions. For example, the Integrated Energy Plan (IEP), which is due for finalisation and submission to Cabinet for approval during the 2014/15 financial year, will include the long- and short-term plans for electricity, gas, nuclear and liquid fuels. This energy plan seeks to provide a future energy roadmap for South Africa, by evaluating the best energy policy options or policy alternatives against each of the eight (8) key objectives identified during the planning process" (Department of Energy, 2014).*

This section of the EMP identifies, lists and describes, the environmental management policies (Table 2) developed by, or alternatively implemented by, the DoE, together with a description of the consequent strategies, plans (Table 3) and programmes (Table 4) that have been developed to guide their implementation. There is also an attempt to provide an indication of the DoE's allocation of resources, responsibilities and timeframe associated with each policy, plan, and programme. It is important to note that in order to focus the content of the EMP only the Policies, Strategies, Plans, Programmes or other mechanisms are included herein that meet the following screening criteria:

- Must relate to the DoE's core environmental functions; and
- Must be the responsibility of the DoE and/or its SOCs and/or SOEs.

Table 2: Departmental Policies

Policy	What is the policy about? And how does the policy relate to the management of the environment?	How will the department ensure compliance to the policy by other organs of state?	List of affected organs of state	What are the responsibilities of the affected organs of state?	What resources does the department have to ensure compliance?	When was the policy promulgated?
<b>White Paper Energy Policy</b>	<p>This policy aims to clarify government policy regarding the supply and consumption of energy for the next decade. It promotes the development of underdeveloped systems in certain areas and demonstrates a resolve to bring about extensive change in a number of areas. The White paper provides an overview of the of the energy sectors contribution to the GDP, employment, taxes and the balance of payments.</p> <p>Part 3 and Part 4 of the policy contain sections involving the management of the environment.</p> <p>Sections 7.5 and 7.7 of Part 3 focus Natural Gas and Renewable Energy Sources respectively. Section 7.5.3 lists the benefits of using natural gas as a source of energy.</p> <p>Sections 8.1, 8.3 and 8.4 focus on integrated energy planning, energy efficiency and environment, health and safety respectively.</p>	<ul style="list-style-type: none"> <li>Implementation of this policy for renewable energy sources will entail the development of: (1) standards and codes of practice, based on international practice and adapted for South African Conditions and cost effective requirements (2) A Standards Laboratory and testing centre according to standards developers as a government private sector initiative.</li> <li>-Establishment of information systems for renewable energy statistics</li> <li>- DoE will utilize internal monitoring and evaluation systems</li> </ul>	<p>DoL Government DoE DEA DWAF DMR Council for Nuclear Safety Local/provincial governments National Electricity Regulator</p>	<p>DoL: The Department of labour, assisted by the DoE, will develop health and safety standards for the construction and operation of transmitting and distribution pipelines, storage and metering.</p> <p>Government will establish suitable information systems of renewable energy statistics, where justifiable, and will assist with the dissemination of renewable energy data and information on renewable energy system applications, system specifications, systems standards, installation and performance guides, technical and economic characteristics and many other related issues. Government will ensure that the necessary resources are made available to establish structures and systems, and put in place legislation to facilitate the specification, collection, acquisition, storage, maintenance and supply of energy data, and energy-related data, according to the requirements of integrated energy planning and international standards. Government will be primarily responsible for monitoring the pollution and resource impacts of bulk energy supply</p> <p>The DoE is required to develop standards and codes of practice for South African conditions and cost effective requirements. Implement the Resource Planning approach and ensure that it is adequately included in the Integrated Environmental Management Process. Include environmental considerations into studies regarding energy suppliers and users. The department is accountable to the minister and is responsible for general governance of the energy sector, the formulation of long-term integrated energy policies, communication with stakeholders, the management of investigation and demonstration programmes, the management of regional and international cooperation, and ensuring that appropriate institutions are established to achieve energy policy objectives.</p> <p>The responsibility of environmental governance of Eskom, municipal generators and private sector companies such as Sasol, is widely distributed between DEA, DWAF, DMR, the Council for Nuclear Safety, Local/provincial government and the National Electricity Regulator.</p>	<p>Human Resources Funding/Financial Resources</p>	<p>Promulgation date: 1998</p>
<b>White Paper on Renewable Energy</b>	<p>Supplements the White Paper on Energy Policy. It a framework in which the renewable industry can operate, grow and contribute positively to the South African Economy. This policy sets out governments' goals, principles and objectives for renewable energy and commits government to ensuring that renewable energy becomes a part of governments' portfolio. The following five policy objectives form the foundation of the White Paper on Energy Policy:</p> <ul style="list-style-type: none"> <li>Increasing access to affordable energy services;</li> <li>Improving energy governance;</li> <li>Stimulating economic development;</li> <li>Managing energy-related environmental and</li> </ul>	<p><b>DoE will utilize internal monitoring and evaluation systems</b></p>	<p>Eskom CEF NERSA</p>	<p>Eskom: Regulated the phased introduction of renewable energy generators CEF: Implementation of renewable energy through the extension of its operational support. Collection of levies. NERSA: regulate prices at which power is purchased from all generators and issue licences of all producers, transmitters, distributors and sellers of energy.</p>	<p>Human Resources Funding/Financial Resources</p>	<p>Promulgation date: 2005</p>

Policy	What is the policy about? And how does the policy relate to the management of the environment?	How will the department ensure compliance to the policy by other organs of state?	List of affected organs of state	What are the responsibilities of the affected organs of state?	What resources does the department have to ensure compliance?	When was the policy promulgated?
<b>Nuclear Energy Policy</b>	<p>health effects; and</p> <ul style="list-style-type: none"> <li>Securing supply through diversity.</li> </ul> <p>The document presents a policy framework within which prospecting, mining, milling and use of nuclear materials as well as the development and utilisation of nuclear energy for peaceful purposes by South Africa shall take place. The Policy is guided by the White Paper on Energy Policy, 1988, and is one of the policy options for electricity generation.</p> <p>The policy highlights the important role of nuclear energy in mitigating climate change by reducing greenhouse gas emissions.</p> <p>The policy outlines numerous objectives including "The creation of a framework for safe and secure utilisation of nuclear energy with minimal environmental impact" and the "reduction of greenhouse gas emissions".</p>	DoE will utilize internal monitoring and evaluation systems	NECSA Government Regulatory Bodies Operators	NECSA: Responsible body for research and development in the field of nuclear energy  Government: Government is responsible for numerous tasks including ensuring cooperative governance, the implementation of the Nuclear Energy Policy, as well as establishing and implementing a legal framework.  Regulatory bodies shall be responsible for the efficient and cost-effective enforcement of compliance with legal requirements and internationally benchmarked regulatory requirements as well as provide advice to Government as appropriate  Operators shall be responsible for fulfilling all regulatory requirements and for ensuring that decisions are taken within the confines of this Policy and any applicable legislation.	Human Resources  Funding/Financial Resources	Promulgation date: 2008
<b>Radioactive waste management (NRWMP)</b>	<p>The policy aims to ensure the establishment of a comprehensive radioactive waste governance framework by formulating, additional to nuclear and other applicable legislation, a policy and implementation strategy. The National Radioactive Waste Management Policy and Strategy lays down options to be considered for managing used fuel and high-level waste.</p> <p>The policy development, and application is driven by certain principles. The following selection of these principles relates to the management of the environment:</p> <ul style="list-style-type: none"> <li>Protection of the Environment: Radioactive waste shall be managed in such a way as to provide an acceptable level of protection of the environment.</li> <li>Polluter pays principle: The financial burden for the management of radioactive waste shall be borne by the generator of that waste.</li> <li>Precautionary principle: Where there are threats of serious irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation (Rio Principle 15).</li> </ul> <p>Environmentally responsible waste management is critical to give effect to the constitutional right to an environment that is not harmful to health and well-being.</p>	<p>The Minister will consult with other government departments and regulatory bodies to develop and maintain a national action plan.</p> <p>Government shall establish the NCRWM. The NCRWM shall:</p> <ul style="list-style-type: none"> <li>Review and recommendation of site/industry specific Radioactive Waste Management Plans (RWMP).</li> <li>Monitor the implementation of Radioactive Waste Management Plans.</li> <li>Recommend to the Minister the issuing of management directives to NRWMA as appropriate.</li> <li>Coordinate radioactive waste management research and development activities of national interest.</li> <li>The NCRWM shall, as and when appropriate, publish a report in respect of radioactive waste management on the basis of information received, validated and processed by the various NCRWM members.</li> </ul> <p>The primary tool for monitoring compliance will be through RWMP. Approved waste management plans shall be reviewed and re-submitted at a predetermined frequency.</p> <p>Government and the Minister must establish a NRWMA (now known as NRWDI).</p>	NNR NECSA	Nuclear authorizations issued under the NNR Act, by the NNP, must take cognisance of the NRWMP. These authorisations together with the other provisions of the Act provide for the protection of persons, property and the environment against nuclear damage. These responsibilities would include radioactive waste management facilities associated with nuclear power stations, nuclear fuel cycle facilities and those facilities that mine and process radioactive ores and minerals.  NECSA, as a generator must develop a RWMP.  NNR is responsible for issuing authorisations and or the institute and to regulate.	Human Resources  Funding/Financial Resources	Promulgation date: 2005
<b>Free Basic Electricity Policy</b>	The policy concerns itself with energy support matters to poor households in general and electricity (Grid and non-grid) and the need to provide free basic services to poor households. The intent of the policy is to address the ways and means through which government interventions can bring about relief to poor electrified households and ensure optimal socio-economic benefits	DoE will utilize internal monitoring and evaluation systems	National Government DoE NEF	DoE: Implementation of non-grid electrification in remote areas, using Solar Home Systems, National Electrification Fund (NEF) provides capital for the Solar Home Systems.  Municipalities: Local Implementation	Human Resources  Funding/Financial Resources	Promulgation date: 2003

Policy	What is the policy about? And how does the policy relate to the management of the environment?	How will the department ensure compliance to the policy by other organs of state?	List of affected organs of state	What are the responsibilities of the affected organs of state?	What resources does the department have to ensure compliance?	When was the policy promulgated?
<p>Energy Efficiency Demand Side Management Policy (EEDSMP) or Suite of Supply Policy</p>	<p>This policy focuses on the management of the electricity demand through energy efficiency interventions within the residential, commercial and industrial sectors. Outcome 4 of the EEDSMP aims to mitigate greenhouse gas emissions and resultant climate change impacts.</p>	<p>DoE will utilize internal monitoring and evaluation systems</p>	<p>Municipalities  NERSA DoE NEEA Provinces and Municipalities</p>	<p>NERSA: - Responsible for tariff determination in accordance with the Electricity Regulation Act of 2006; - Determine the generation avoided cost in relation to the EEDSM intervention, so as to determine the level of standard offer rebate; - Ensure that the energy efficiency resource standard (EERS) funding provision is included in the MYPD; - Introduce rules that will apply to licensees in regard to the EERS and the standard offer methodology; - Ring-fence the allowance for the EERS in the MYPD and ensure that it is accessed by ESCOs/licensees only subject to the promulgated rules; - Ensure that a cost recovery mechanism is in place for all disbursements by Eskom/System Operator pursuant to the EEDSM rules; - Develop a reporting framework for EEDSM by licensees; - Monitor and evaluate the achievement of EEDSM interventions by various ESCOs; - Approve the basis for compensation for other EEDSM interventions like residential load management, fuel switching etc.; - Ensure sufficient communication and understanding of EEDSM among all stakeholders.  DoE: Set the EERS  NEEA: Ensure that EERS is in accordance with the standard offer model.</p>	<p>Human Resources  Funding/Financial Resources</p>	<p>Promulgation date: 2010</p>

Table 3: Departmental Plans and Strategies

Plan or Strategy	What is the plan or strategy about? And how does the plan or strategy relate to the management of the environment?	How will the department ensure compliance to the plan or strategy by other organs of state?	List of affected organs of state	What are the responsibilities of the affected organs of state?	What resources does the department have to ensure compliance?	What is the life span of the plan or strategy?
<b>National Energy Efficiency Strategy</b>	The strategy takes its mandate from the White Paper Energy Policy (1998) and links the energy sector development with national socio-economic development plans as well as being in line with government department initiatives. The strategy allows for the implementation of low cost and no-cost interventions, as well as those higher-cost measures with short payback periods. Allow for contribution towards affordable energy for all and to minimise the negative effects of energy usage upon human health and the environment.	Establish a system for continuous updating and registration of figures related to energy efficiency, in particular, indicators for efficiency measurement. Establishment of a formal system for collecting, managing data and calculating indicators is necessary for monitoring the implementation and success of activities initiated as part of the strategies for EE.  DoE will utilize internal monitoring and evaluation systems	SANEDI SARS Local Government NDoT STANSA DEA SAPIA NAMSA DTI DPE DoH Eskom NERSA DSM DPW CSIR SABS	<ul style="list-style-type: none"> <li>SANEDI serves as a repository for all energy efficiency interventions and outcomes.</li> <li>DoE: Policy Development</li> </ul>	Human Resources Funding/Financial Resources	2005-2015
<b>Biofuels Industrial Strategy of the Republic of South Africa</b>	The Strategy is targeted at creating jobs in the energy-crop and biofuels value chain, and to act as a bridge between the first and second economy. Biofuels can contribute towards the achievement of the renewable energy goals, energy security and the reduction of greenhouse gas emissions. The Biofuels Strategy initially aims to develop the biofuels industry to achieve a penetration of 2% of the national liquid fuel supply. This would contribute 30% to the national Renewable Energy target for 2013. The IRP and the subsequent update have considered and factored in the DEA's 2011 explanatory note which defined South Africa's Peak, Plateau and Decline Greenhouse Gas Emission Trajectory.	Biofuels producers, need to obtain a manufacturing licence from the Petroleum Products Controller falling within the DDG Hydrocarbons. Biofuels producers will have to meet the licensing condition which will include amongst others, crop selection, feedstock availability, quality requirements, environmental standards (Environmental Impact Assessment) and water restrictions.  DoE will utilize internal monitoring and evaluation systems	DoE CEF IDC	<p>DoE:</p> <ul style="list-style-type: none"> <li>The DDG Hydrocarbons has the responsibility to review and process applications for manufacturing licences.</li> <li>The DoE should develop a comprehensive implementation plan.</li> </ul> <p>CEF:</p> <ul style="list-style-type: none"> <li>Central Energy Fund (CEF) will play a role as investors in public-private partnerships or even as investment consortium leaders or indeed even as individual investors in Biofuels projects.</li> </ul> <p>Other Organs of State:</p> <ul style="list-style-type: none"> <li>The strategy suggests that the public entities which utilise large volumes of fuel, should develop mechanisms and incentives for the use of Biofuels in their fuel mix.</li> </ul>	Human Resources Funding/Financial Resources	2007-2020
<b>Integrated Energy Plan (IEP) (Draft)</b>	The purpose of the Integrated Energy Plan (IEP) is to determine and present the best way to meet current and future energy service needs in the most efficient and socially beneficial manner, while, amongst others, minimising the adverse impacts of the energy sector on the environment. The IEP identifies key objectives, of which the following relate to the management of the environment:	DoE will utilize internal monitoring and evaluation systems	DoE DST DEA DED	IEP Steering Committee: Overseeing of the IEP development process and ensures that legislation, strategies and policies that have an impact upon the energy sector are taken into account.	Human Resources Funding/Financial Resources	Draft 2013

Plan or Strategy	What is the plan or strategy about? And how does the plan or strategy relate to the management of the environment?	How will the department ensure compliance to the plan or strategy by other organs of state?	List of affected organs of state	What are the responsibilities of the affected organs of state?	What resources does the department have to ensure compliance?	What is the life span of the plan or strategy?
National Nuclear Disaster Management Plan	<p>Objective 5: Minimise emissions from the energy sector.</p> <p>Objective 6: Promote energy efficiency in the economy, and</p> <p>Objective 8: Promote the conservation of water.</p> <p>The following are the key aspects of the plan:</p> <ul style="list-style-type: none"> <li>Energy supply will remain reliant on coal for at least the next two decades.</li> <li>Energy supply will be diversified through the increased use of natural gas and renewable energies.</li> <li>Investigations into nuclear options as a future new energy source will be continued.</li> <li>The use of energy efficiency management and technologies will be promoted.</li> <li>Load factors on electricity generation plant to lower levelised lifecycle costs will be maximised.</li> <li>Reliance on imported liquid fuels by exploring and developing oil / gas deposits will be lessened.</li> <li>Existing oil refineries capacities when appropriate rather than green fields' development will be increased.</li> <li>Existing syrrfuel plants will be maintained and supplemented with natural gas as feedstock.</li> <li>New electricity generation will remain coal based with potential for hydro, natural gas and nuclear capacity.</li> <li>Environmental considerations in energy supply, transformation and end use will be ensured.</li> <li>Universal access to clean and affordable energy, with emphasis on household energy supply being co-ordinated with provincial and local integrated development programmes will be promoted.</li> <li>Policy, legislation and regulation for the promotion of renewable energy and energy efficiency measures and mandatory provision of energy data will be introduced.</li> <li>Integrated energy planning will be undertaken on an ongoing basis.</li> </ul> <p>The scope of this Plan focuses on nuclear disaster management at national government level and relates to oversight in the following areas:</p> <ul style="list-style-type: none"> <li>Nuclear Reactors and other Nuclear Fuel Cycle facilities requiring nuclear emergency plans;</li> <li>Nuclear powered vessels;</li> <li>Transport of radioactive material within the nuclear fuel cycle (air, land &amp; sea);</li> <li>Radioactive contamination from nuclear-powered satellites;</li> <li>Radioactive fallout from nuclear weapons.</li> </ul> <p>The definition of 'Disaster' in the Disaster Management Act (Act 57 of 2002) includes an occurrence which causes or threatens to cause damage to the environment. The DoE is mandated to develop the Disaster Management Plan in so far as it relates to National Nuclear disasters.</p>	<p>DoE:</p> <ul style="list-style-type: none"> <li>Ensuring integrated nuclear disaster management planning and, following the declaration of a "National Disaster", ensuring Joint Coordination, Decision-making and Management by all three levels of Government.</li> <li>Ensuring oversight at national level of institutional nuclear emergency preparedness in accordance with state of the art international principles.</li> <li>Ensuring ongoing human resource capacity in DoE to serve obligations.</li> <li>Ensuring training of DoE staff with responsibilities in emergency response.</li> <li>Conduct nuclear emergency exercises and participate in institutional exercises at frequencies agreed with stakeholders.</li> <li>Keep the management &amp; ministry informed about nuclear disaster management plan.</li> <li>Ensuring that procedures are in place to request resources at national and international level.</li> </ul>	<p>DoE</p> <p>NNR</p> <p>NECSA</p> <p>Provinces/ Municipalities</p>	<p>DoE:</p> <ul style="list-style-type: none"> <li>The Minister is responsible to make regulations related to nuclear emergency planning and assume a leading role in the National Executive's oversight during a nuclear disaster.</li> <li>The Minister is responsible to address claims in excess of the financial security provided by the holder of the nuclear authorization.</li> </ul> <p>DoE Chief Directorate Nuclear:</p> <ul style="list-style-type: none"> <li>Service the Minister's (M&amp;E) obligations regarding nuclear emergency planning matters under the NNR Act (Issue regulations on Financial Security, Public Safety Information Forum and Safety Standards).</li> <li>Ensure compliance with section 25 of the DM Act regarding the obligations of the National Organ of State to prepare and maintain a National Nuclear Disaster Management Plan and coordinate its implementation.</li> <li>Ensure establishment and Chair Nuclear Emergency</li> </ul>	<p>The Chief Directorate Nuclear is responsible to give strategic direction and provide national coordination. The Chief Directorate Nuclear must ensure the availability of technically educated and experienced staff.</p> <p><b>Human Resources</b></p> <p><b>Funding/Financial Resources</b></p>	<p>Published in 2005</p>

Plan or Strategy	What is the plan or strategy about? And how does the plan or strategy relate to the management of the environment?	How will the department ensure compliance to the plan or strategy by other organs of state?	List of affected organs of state	What are the responsibilities of the affected organs of state?	What resources does the department have to ensure compliance?	What is the life span of the plan or strategy?
<p><b>Integrated Resource Plan (Updated 2013)</b></p>	<p>The IRP is a National Electricity Plan, a subset of the Integrated Energy Plan that directs the expansion of the electricity supply over the given period. The IRP gives effect to the following policy objectives:</p> <ol style="list-style-type: none"> <li>i. 10000 Gwh (approximately 4% of the energy mix) of renewable energy by 2013.</li> <li>ii. The implementation of Energy Efficiency and Demand Side Management through financial incentive scheme (the standard offer policy)</li> </ol>	<ul style="list-style-type: none"> <li>• Ensuring that procedures are in place to deal with radioactive waste arising from decontamination.</li> <li>• The DoE nuclear disaster management plan is aligned with other role-players and such alignment is coordinated on an ongoing basis by DoE's participation in the Nuclear Emergency Planning Steering and Oversight Committees.</li> <li>• The DoE nuclear disaster management plan will be reviewed on an ongoing basis and updated as required.</li> </ul> <p>NECSA:</p> <ul style="list-style-type: none"> <li>• Must establish a formal procedure to implement the obligations under the relevant International Atomic Energy Agency Conventions.</li> </ul> <p>DoE will utilize internal monitoring and evaluation systems</p>	<p>DoE DEA Carbon Capture and Storage</p>	<p>Planning Steering and Oversight Committees (EPSOC) for relevant nuclear installations as per a formal Terms of Reference.</p> <ul style="list-style-type: none"> <li>• Represent DoE at meetings of the Intergovernmental Committee on Disaster Management established in terms of the DM Act.</li> <li>• In case of a National Disaster declared as a result of a nuclear emergency, deploy a DoE representative to the Joint Operations Centre (JOC) of the relevant local government authority (or other appropriate centre) and deploy a DoE representative to the National Disaster Management Centre. At these centers DoE will participate in Joint decision making and management of the emergency in accordance with the procedures at these facilities.</li> <li>• Responsible for Joint Coordination of post-disaster recovery and rehabilitation with other two levels of government and with the necessary input from the holder of the nuclear authorisation and the nuclear regulator.</li> <li>• Responsible for notifying, through official channels, South Africa's bordering States about a nuclear emergency (Note: As a result of the distance to bordering States it is highly unlikely that a nuclear accident in South Africa will pose a hazard to any).</li> <li>• Responsible for establishing any procedures required in terms of this plan.</li> </ul> <p><u>NNP:</u></p> <ul style="list-style-type: none"> <li>• Review (ensuring its effectivity) and approve nuclear emergency plans to be prepared in consultation with relevant provincial and municipal authorities, and submitted by the holder of a nuclear authorisation.</li> <li>• Conduct Regulatory Emergency exercises, audits and inspections in order to ensure the effectiveness of the emergency plan in ensuring protection of the people and the environment.</li> </ul> <p><u>NECSA:</u></p> <ul style="list-style-type: none"> <li>• Designated as the National Competent Authority to service the Convention on early notification of a nuclear accident.</li> <li>• To be the designated Contact Point using the 24 hour NECSA Emergency Control Centre.</li> </ul> <p><u>Provinces and Municipalities:</u></p> <ul style="list-style-type: none"> <li>• Establish and implement a Provincial/ Municipal Disaster Management Plan and establish a Provincial/ Municipal Disaster Management Centre. Execute powers and duties as per the DM Act.</li> </ul>	<p><b>Human Resources</b> <b>Funding/Financial Resources</b></p>	<p>2010-2030 (Promulgated in 2011).</p>



Plan or Strategy	What is the plan or strategy about? And how does the plan or strategy relate to the management of the environment?	How will the department ensure compliance to the plan or strategy by other organs of state?	List of affected organs of state	What are the responsibilities of the affected organs of state?	What resources does the department have to ensure compliance?	What is the life span of the plan or strategy?
	<p>iii. Installation of one million solar water heaters</p> <p>The IRP refers to the co-ordinated schedule for generation expansion and demand-side intervention programmes, taking into consideration multiple criteria to meet electricity demand. The IRP aims to co-ordinate the generation capacity to meet the projected future demands whilst considering the applicable policy directives.</p> <p>The IRP relates to the management in the environment in that it guides our future electricity generation and by considering emissions as defining criteria, assists in fulfilling South Africa's commitments to mitigating climate change as expressed at the Copenhagen climate change summit. Constraints considered in the IRP not only included carbon emissions but also reductions in water usage.</p>	<p>systems</p>		<p>impacts (specifically the Departments of Water Affairs and Environmental Affairs should agree on the appropriate way forward to deal with the impacts of flue gas desulphurisation on water resources in Mpumalanga).</p> <ul style="list-style-type: none"> <li>Continue with the current renewable bid programme with additional annual rounds (of 1000 MW PV capacity, 1000 MW wind capacity and 200 MW CSP capacity), with the potential for small hydro and land-fill gas at competitive rates.</li> </ul> <p>Carbon Capture and Storage</p> <p>Carbon Capture and Storage (CCS) technologies were identified in the 2010 IRP as requiring further research and investigation.</p>		

Table 4: Departmental programmes

Programme	What is the programme about? And how does the programme relate to the management of the environment?	How will the department ensure compliance to the programme by other organs of state?	List of affected organs of state	What are the responsibilities of the affected organs of state?	What resources does the department have to ensure compliance?	What is the life span of the programme?
<b>ELECTRIFICATION AND ENERGY PROGRAMME AND PROJECT MANAGEMENT</b>						
<b>National Integrated Electrification Programme</b>	The purpose of the INEP is to manage the electrification planning, funding and implementation process with the aim of addressing electrification backlog so as to reach universal access by 2014. Furthermore by providing capital subsidy to both Eskom and municipalities to address the electrification backlog of permanent occupied residential dwellings, the installation of bulk infrastructure and the rehabilitation and refurbishment of electricity infrastructure in order to extend the access of electricity  INEP is an initiative of government to provide capital subsidies to municipalities to address the electrification backlog of permanently occupied residential dwellings.  The INEP is aligned with the White Paper Energy Policy and the Electrification Pricing Policy	DoE will utilize internal monitoring and evaluation systems	NERSA Eskom Local/Provincial Municipalities	NERSA: Regulation of the Electricity Supply Industry (ESI) tariffs (e.g. domestic electricity tariffs). DoE provide transfer payments to Eskom, Non-grid Service Providers and Local Governments to roll out energy efficiency initiatives, including the demand side management programme.	Human Resources Funding/Financial Resources	
<b>CLEAN ENERGY PROGRAMME</b>						
<b>Renewable Energy Independent Power Producers (RE-IPP) procurement programme</b>	The RE-IPP Procurement Programme has been designed to contribute towards the renewable energy targets stipulated in the IRP. The aim of the programme is to stimulate the renewable industry in South Africa	DoE will utilize internal monitoring and evaluation systems	NERSA Eskom	NERSA issues evaluates proposed renewable energy projects and issues generation licences. Eskom concludes power purchase agreements with selected renewable projects.	Human Resources Funding/Financial Resources	On-going until stipulated targets are met.
<b>Energy Efficiency and Demand Site Management Flagship Programme</b>	The project replaces inefficient building, traffic and street lights with energy efficient technologies. In addition, low-pressure Solar Water Heating systems are installed in low-income households. Eskom drives large scale mass roll-outs of Energy Efficiency Demand Side Management (EEDSM) programmes, which focus on identifying and promoting more efficient ways to use electricity, through the implementation of technology enhancements and behaviour change. The majority of savings in the residential sector have been achieved through the implementation of large-scale mass rollouts replacing incandescent light bulbs with compact fluorescent lamps (CFLs).  Through this Programme, the DoE, DPW, and the DEA in partnership with the German government and GIZ are facilitating the development and preparation of the vertically-integrated NAMA, also known as V-NAMA, in Public Buildings.  The Energy Efficiency and Energy Demand Management Flagship Programme builds on the energy efficiency programmes in: (i) Industry- DoE, (ii) the experience of Eskom's Demand Side Management programme, (iii) the government building energy efficiency programme led by the DPW	DoE will utilize internal monitoring and evaluation systems	DoE- Industry DPW- Government Buildings Eskom. Provinces and Municipalities.			
<b>Cleaner Fuels</b>	This programme which includes the Clean Fuels Road	Issue regulations regarding petroleum products	Petroleum Products	DoE:	Human Resources	2012- 2017

Programme	What is the programme about? And how does the programme relate to the management of the environment?	How will the department ensure compliance to the programme by other organs of state?	List of affected organs of state	What are the responsibilities of the affected organs of state?	What resources does the department have to ensure compliance?	What is the life span of the programme?
<b>Programme</b>	Map aims to bring South Africa in line with Euro 5 fuel specification standards by 2017, through the reduction of sulphur to 10ppm as well as reductions in benzene, aromatics and olefins. The programme objectives are being driven through the fuel specifications and standards. The regulations aim to reduce the harmful emissions associated with diesel and petrol.	specifications and standards. The regulations make provision for inspections and testing by an inspector. The Euro 5 Fuel specification standards must be implemented in 2017. DoE will utilize internal monitoring and evaluation systems	Controller falling within the DDG - Petroleum Products Regulation - DoE.	<ul style="list-style-type: none"> <li>The Controller should carry out inspections and testing.</li> </ul>	Funding/Financial Resources	
<b>South African Wind Energy Programme (SAWEP)</b>	The South Africa Wind Energy Programme (SAWEP) was originally planned as a five-year, full-size programme. SAWEP is funded by the Global Environmental Fund (GEF) and implemented by the United Nations Development Programme (UNDP). The Danish Government through the Royal Danish Embassy (RDE) also supports some of the project activities. SAWEP Phase 1 was implemented over two years from February 2008 to December 2010. The objective of SAWEP is to install and operate 5.2 MW of electricity generated from the Darling Wind Farm National Demonstration Programme and further prepare the development of an additional 45 MW of wind power from Independent Power Producers.	DoE will utilize internal monitoring and evaluation systems.	DoE	The DoE is responsible for executing this programme and a Project Management Unit (PMU) was established to provide secretariat, coordination and overall management functions and tasks related to the different programme outputs.	Human Resources Funding/Financial Resources	2008
<b>Green Transport Programme</b>	The "Green Transport Programme" has the following strategic focus areas: <ul style="list-style-type: none"> <li>Piped Compressed Natural Gas (CNG) &amp; refuelling infrastructure;</li> <li>Land Fill Gas, and municipal waste harvesting for municipal fleets and public transport;</li> <li>Liquid Petroleum Gas (LPG);</li> <li>Biodiesel and micro-emulsification technologies and refuelling infrastructure;</li> <li>Electric Vehicles (EVs) and recharge infrastructure; and</li> <li>A technology incubation hub, where SMME's and developers can be assisted in technology innovation and concept development to bring new solutions from concept to commercialisation.</li> </ul>	DoE will utilize internal monitoring and evaluation systems	DoT- Lead SANEDI	SANEDI will build an enabling environment that facilitates practical application with applied research and cultivates such initiatives to commercialisation so that as the interventions gain traction and acceptability, they will assist in the conception and facilitation of an entirely new industrial sector in alternate fuels and propulsion systems and further enhance Enterprise Development and Job Creation as strategic thorough puts for the New Growth Plan	Human Resources Funding/Financial Resources	2010
<b>Integrated Energy Centres</b>	The purpose of the Integrated Energy Centre (IEC) is to provide a one-stop energy shop that provides energy services, information, increase awareness of alternative energy technologies and promote energy efficiency to communities. These IEC's are owned by registered community cooperatives and implemented through Integrated Development Plans of Municipals The role of the Integrated Energy Centres are to- <ul style="list-style-type: none"> <li>Provide access to safe and affordable energy resources to poor households.</li> <li>Provide access to information regarding the safe, efficient and environmentally sustainable use of energy sources.</li> <li>Promote the SMME sector and job opportunities through energy related businesses.</li> <li>Provide access to energy safe appliances.</li> <li>Influence policy on both the public and private sectors regarding access to safe and affordable energy.</li> </ul>	DoE will utilize internal monitoring and evaluation systems	Local/district municipalities Community cooperatives Donor agencies Government departments Sasol	DoE: Project Facilitation, energy needs analysis, assist with site and retail license Oil Company: Infrastructure development Municipality: Provision of project support staff, staff salaries for the first year, water and electricity connections, access to roads, land for the project Department of Rural Development and Land reform: Provision of communal residence and land transfers Department of Cooperative Governance, Human Settlements and Traditional Affairs: Support to the project and possible funding Small Enterprise Development Agency (SEDA): recruitment, training and registration of co-operative incentive scheme to assist with business start-up and project mentorship Department of Environmental Affairs: Conduct EIA for the project	Approximately R6 million has been allocated for infrastructure development by Oil company Sasol: R20 million investment for the establishment of five energy centres Human Resources Funding/Financial Resources	2002-ongoing

Programme	What is the programme about? And how does the programme relate to the management of the environment?	How will the department ensure compliance to the programme by other organs of state?	List of affected organs of state	What are the responsibilities of the affected organs of state?	What resources does the department have to ensure compliance?	What is the life span of the programme?
<p><b>Designated National Authority Project (Clean Development Mechanism)</b></p>	<p>Regulations were promulgated under Section 25 of the NEiA establishing the Designated National Authority (DNA). This regulation established the DNA within the DoE and provides the DNA with its legal mandate to oversee the Clean Development Mechanism (CDM) in South Africa. CDM is a flexible mechanism under the Kyoto Protocol of the UNFCCC that provides a practical framework to reduce or stabilize GHGs that cause global warming and climate change. CDM projects generate carbon credits with a monetary value that could result in additional financial resources flow to a developing country allowing it to implement a GHG emissions reduction programme.</p> <p>The main task of the DNA is to assess potential CDM projects to determine whether they will assist South Africa in achieving its sustainable development goals and to issue formal host country approval where this is the case.</p> <p>The DNA for South Africa was established in late 2004.</p>	<p>The DNA will issue approvals for qualifying CDM projects, within the timeframes stipulated in the Regulations.</p> <p>The Steering Committee must submit monitoring reports on performance and must review and approve annual plans and programmes.</p> <p>DoE will utilize internal monitoring and evaluation systems</p>	<p>DoE Steering Committee, comprised of:</p> <ul style="list-style-type: none"> <li>• DEA</li> <li>• DWS</li> <li>• DFA</li> <li>• DTI</li> <li>• DALA</li> <li>• DoT</li> <li>• Treasury</li> <li>• DST</li> <li>• DoH</li> </ul>	<p>The DNA is responsible to:</p> <ul style="list-style-type: none"> <li>• Establish and apply an approval procedure in terms of regulation 6;</li> <li>• Consider applications by project proponents for endorsement that the project complies with the international and national criteria for CDM projects and where appropriate comment on Project Design Documents;</li> <li>• Issue letters of approval to project proponents in respect of CDM projects that meet the international and national sustainable development criteria approved by the Minister from time to time;</li> <li>• Facilitate the effective and beneficial participation of South Africa and South African public and private sector entities in the activities of the CDM;</li> <li>• Promote the establishment of CDM projects in the Republic in cooperation with other government agencies with the same or similar responsibilities;</li> <li>• Monitor and report to the Minister from time to time on CDM projects and activities in the Republic;</li> <li>• Declare all donations received in accordance with the provisions of the Public Finance Management Act, 1999 (Act No. 1 of 1999).</li> </ul> <p>The Steering Committee is responsible to:</p> <ul style="list-style-type: none"> <li>• Provide supervision and advice with regard to the operations of the DNA;</li> <li>• Consider and make recommendations to the DNA in respect of CDM projects submitted to it;</li> <li>• Approve the CDM project evaluation and approval procedure;</li> <li>• Facilitate the development of administrative guidelines and arrangements required for the effective functioning of the DNA;</li> <li>• Facilitate cooperative governance and coordination over issues related to the CDM between National Departments and government agencies;</li> <li>• Review and approve the DNA's annual business plan and work programmes;</li> <li>• Address issues arising from CDM projects and activities submitted to it;</li> <li>• Monitor and review the performance of the DNA every three years and submit a report on the performance of the DNA to the Minister of Energy summarising the performance evaluation of the DNA;</li> <li>• Establish a sub-committee on the promotion of CDM and promotion of the CDM in the Republic through different national departments and agencies;</li> <li>• Advise and make recommendations for the implementation of the CDM in the Republic to the DoE and Cabinet as appropriate;</li> <li>• Perform any other responsibility that may be allocated to it by Ministers via the Minister of Energy.</li> </ul>	<p>Human Resources Funding/Financial Resources</p>	<p>2004- ongoing</p>
<p><b>South African Centre for Carbon Capture and Storage</b></p>	<p>The purpose of the Centre is to develop human and technical capacity on CCS and to prepare the countries state of readiness, to make sure that the enablers is in place for the implementation of CCS. Country readiness includes, identification and characterisation of emission sources, identification and characterisation of geological</p>	<p>DoE will utilize internal monitoring and evaluation systems</p>	<p>SANEDI Sasol Total Coal PetroSA</p>	<p>Provide funding to the project. Undertake research. Provide support for the project.</p>	<p>Human Resources Funding/Financial Resources</p>	<p>2004-2025</p>

Programme	What is the programme about? And how does the programme relate to the management of the environment?	How will the department ensure compliance to the programme by other organs of state?	List of affected organs of state	What are the responsibilities of the affected organs of state?	What resources does the department have to ensure compliance?	What is the life span of the programme?
<p><b>South African Solar Energy Technology Road Map (SETRM)</b></p>	<p>Storage site, regulatory system, plant readiness, capacity building, technical know-how, human capacity development and public outreach. The Centre is a private/international/public partnership funded by Government and international organisations.</p> <p>The road map of the centre and South Africa's programme for CCS is envisaged in five phases:</p> <ul style="list-style-type: none"> <li>- Preliminary Potential Investigation: A preliminary investigation was undertaken by the CSIR for the Department of Minerals and Energy to ascertain whether South Africa had potential sequestrable carbon dioxide sources and storage sites.</li> <li>- Geological Storage Atlas: The aim of the atlas was to identify the potential geological sites of carbon dioxide.</li> <li>- Pilot Carbon Dioxide Storage Project/CO<sub>2</sub> Injection Experiment: The test injection of carbon dioxide into South African rocks is essential to the understanding of the suitability of the local geology as a storage medium (inject 100s thousands of tonnes). It is also necessary to ascertain the dispersion and reactions of the carbon dioxide in the storage medium.</li> <li>- Demonstration Plant: The test injection of carbon dioxide into South African rocks is essential to the understanding of the suitability of the local geology as a storage medium (inject 10s thousands of tonnes). It is also necessary to ascertain the dispersion and reactions of the carbon dioxide in the storage medium.</li> <li>- Commercial Operation: Should all of the above phases be successful, then a commercial plant is envisaged. (million thousands of tonnes)</li> </ul> <p>The first two phases of the project are complete with phase three scheduled to begin in 2016/2014.</p> <ul style="list-style-type: none"> <li>▪ In parallel with the above five phases, intensive support research and creation of human capacity encompassing the following will be undertaken:-</li> <li>▪ Capture technologies</li> <li>▪ Transport technologies</li> <li>▪ Geological storage technologies</li> <li>▪ Monitoring and verification</li> <li>▪ Remediation technologies</li> <li>▪ Risk assessments</li> <li>▪ Legal and regulatory regimes</li> <li>▪ Public outreach/awareness</li> </ul> <p>This will be undertaken through the South African Centre for Carbon and Storage, government, industry and other research institutions.</p>	<p>DoE will utilize internal monitoring and evaluation systems</p>	<p>Eskom, Anglo Coal Xstrata Coal government Xstrata Government of the UK; The Department of Energy and Climate Change DEA Alstom PetroSA Agence Francaise de Developpement Government of Norway The Global Carbon Capture and Storage Institute Carbon Sequestration Leadership Forum IEA GHG IPAX-CO2</p>	<p>SANEDI: Research and development of solar energy technologies.</p>	<p>SACCCS is financially supported by the South African Government through SANEDI, the governments of Norway and South African industries. Sasol and Eskom. Current additional participants are the Anglo American, Xstrata Coal, Total, PetroSA, Agence Francaise de Developpement (AFD), Alstom, and Exxaro</p>	<p>Human Resources Funding/Financial Resources</p>

Programme	What is the programme about? And how does the programme relate to the management of the environment?	How will the department ensure compliance to the programme by other organs of state?	List of affected organs of state	What are the responsibilities of the affected organs of state?	What resources does the department have to ensure compliance?	What is the life span of the programme?
	<p>Southern Africa region. The objectives of the SETRM include:</p> <p>Develop a clear, comprehensive, and prioritized implementation plan (i.e. roadmap) for the development and diffusion of concentrated solar power, solar photovoltaic technology (pv), solar heating and cooling technologies; and related R &amp; D in South Africa toward reduced energy use, carbon emissions reduction, distributed electricity generation, expanded independent power production and electricity supply to the national grid, and the reduction of reliance on carbon fuels.</p> <p>The Working for Energy Programme (The Programme) is a social programme mainly intended to provide energy services derived from renewable resources to rural and urban low income houses in a manner that facilitates job creation, skills development, community based enterprise development and emancipation of youth, women and people with disabilities and thereby create sustainable livelihoods. It is an integral part of the Expanded Public Works Programme.</p>	DoE will utilize internal monitoring and evaluation systems	SANEDI or SANERI	SANEDI: Applied research into the availability and sustainability of renewable energy resources in target areas.	Human Resources Funding/Financial Resources	2009
<b>Solar Water Heating Programme</b>	The programme promotes the installation of Solar Water Heaters that will contribute towards governments renewable energy target of 10000GWh.	DoE will utilize internal monitoring and evaluation systems	ESKOM NERSA	NERSA: Provide funding for the programme	Human Resources Funding/Financial Resources	2009-2014
<b>Clean Energy Education and Empowerment (C3E-SA) initiative</b>	<p>C3E is an initiative designed to empower young girls and women in the field of Clean Energy. It aims to recruit young girls and women to take up subjects and pursue careers in the field of Science, Technology, Engineering, and Mathematics (STEM). It is an all-inclusive package which includes career guidance, mentoring and coaching, bursaries, internships, an exchange programme locally and internationally, leadership grooming, training, &amp; support for women in business in Energy.</p> <p>The mission for C3E-SA include:</p> <ul style="list-style-type: none"> <li>To attract and inspire women.</li> <li>To pursue careers and support their advancement into leadership positions in clean energy.</li> <li>To create entrepreneurship opportunities in the field of clean energy.</li> <li>To encourage lifestyles that support clean energy.</li> <li>To raise awareness on clean energy as a preferred source of energy.</li> </ul>	<ul style="list-style-type: none"> <li>A C3E Steering Committee has been established to control and advise the initiative.</li> <li>Members of the DoE and its SOCs and SOEs have been identified as ambassadors to the initiative.</li> <li>Carry out C#E campaigns.</li> <li>Conduct a C#E SADC Conference.</li> </ul>	DoE and its SOCs and SOEs.  This initiative is run in partnership with other Government and Department and companies in the Energy Industry.	<p>This initiative is implemented through the following structures:</p> <ol style="list-style-type: none"> <li>Empowerment Team: This team focuses on the empowerment of women employed in the Energy Sector and women doing business in the Energy sector.</li> <li>Education Team: This team focuses on identifying and recruiting girls in high school &amp; tertiary students in the field of STEM to be part of C3E.</li> <li>Research &amp; Innovation Team: This team focuses research done by women in the field of clean energy; and linking students and graduates with research institutions.</li> <li>Communication Team: This team focuses on branding, marketing, and publications for C3E.</li> <li>Steering Committee: The Steering Committee plays an advisory and control role and is responsible for advocacy and fundraising for this initiative.</li> </ol> <p>Each of these teams has a defined set of performance indicators and targets for the Medium Term.</p>	Human Resources Funding/Financial Resources	

## 5. SECTION 5: CO-OPERATIVE GOVERNANCE AND COLLABORATION

"In an attempt to establish a more integrated or co-operative approach to environmental governance, the South African legal framework makes extensive provision for Co-operative Environmental Governance (CEG) in, *inter alia*, the Constitution of the Republic of South Africa, 1996; NEMA; Sectoral environmental legislation and the Intergovernmental Relations Framework Act 13 of 2005 (IRFA)" (Fuggle & Rabie, 2009). This section provides a description of the external relationships with other national, provincial and local government departments (or their organs of state) and the mechanisms and procedures that the department (and its organs of state) uses to give effect to its environmental policies.

In addition South Africa is an active player in the international environmental governance arena. This participation and commitment is evidenced by the conventions, treaties, and bilateral agreements that South Africa is party to. Relevant international collaboration is also briefly presented in this section.

### 5.1. INTERNATIONAL COLLABORATION

South Africa is a member of several conventions, treaties and bilateral agreements that relate to the management of the environment. This section briefly presents a selection of these arrangements. Participation and commitment to these mechanisms has a direct impact on the management of the environment at a national and strategic policy making level.

#### 5.1.1. CONVENTIONS AND TREATIES

South Africa is a party to several international conventions which deal with a range of issues on which international action is required for effective environmental management. South Africa's participation in these conventions is consistent with its acceptance of shared responsibility for global and regional environmental issues as outlined in the Environmental Management Policy. The Conventions and other agreements advocate the application of the principles of sustainable development. Some of the commitments result from South Africa's membership of the United Nations. However, as a member of the Southern African Development Community (SADC), the country is committed to ensuring that national policies are consistent with the goals of regional coordination. Illustrative of this are the protocols on energy, which advocate common and coordinated approaches to the development of the respective sectors.

The global and regional agreements that relate to the environment are administered by DEA. Other departments support implementation where it relates to their mandates. The following conventions or treaties relate (either directly or indirectly) to the Departments core environmental functions:

- Rio Declaration and Principles, Agenda 21.
- Protocol for the protection of the Ozone Layer (Montreal Protocol).
- Convention on the trans-boundary movements of hazardous wastes and their disposal.

- UN framework convention on climate change.
- Kyoto protocol.
- Convention on Nuclear Safety.
- The convention on the Physical Protection of Nuclear Material.
- The Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

Please refer to Annexure F for further details.

#### 5.1.2. BILATERAL AGREEMENTS

South Africa has entered into several bilateral agreements aimed at enhancing cooperation in the field of energy. These include the following:

1. Memorandum of Understanding between the Republic of South Africa and the Republic of Mozambique to enter negotiations aimed at reaching agreement on gas, 1996.
2. Memorandum of Understanding between the Republic of South Africa and the Republic of Mozambique with regard to Mepanda Uncua to investigate the possibility of a hydro scheme, 1997.
3. Agreement between the Republic of South Africa and the Republic of Mozambique to create a Cross Border Gas Trade Commission and facilitate the movement of gas across the border, 2001.
4. Agreement between the Republic of South Africa and the Republic of Namibia to create a Cross Border Gas Trade Commission and facilitate the movement of gas across the border, 2001.
5. Memorandum of Cooperation between the Government of the USA and the Government of the RSA on the exchange of information and cooperation on nuclear safety, safeguards and physical security, 1999.
6. Agreement of Cooperation between the Government of France and the Government of the RSA on the development and utilization of peaceful nuclear energy.
7. Statement of Intent Concerning Cooperation in Sustainable Energy Development and the Mitigation of Greenhouse gases between the USA and RSA.
8. Agreement of Cooperation between USA and RSA on the Peaceful Uses of Atomic Energy, November 2005.

## 5.2. RELEVANT NATIONAL CO-OPERATIVE GOVERNANCE MECHANISMS.

This section indicates the mechanisms and procedures that the department uses to give effect to its environmental policies. This includes a description of the institutional arrangements for environmental management. The section also identifies external relationships with other national, provincial, and local government departments, as well as relevant internal relationships (e.g. between DoE SOEs and SOCs). To assist



the DoE in delivering on certain mandates, key SOCs and SOEs have been established. Table 5 provides a list a description of the relevant mechanisms for co-operative governance applied by the DoE and its SOCs and SOEs.

Table 5: Co-operative Governance

Mechanism	Description / purpose	Lifespan	Role-players	Level of commitment
<b>Solar Parks Memorandum of Understanding (MoU)</b>	<p>This MoU between the DoE (represented by the CEF) and the Clinton Climate Initiative (CCI) focused on preparing a pre-feasibility study assessing the potential of developing one or more Solar Parks in South Africa.</p> <p>The project operates under oversight of the Programme Steering Committee (PSC) chaired by the DoE. Key decisions on this initiative are made in line with the CEF/DOE Policies and an Implementation Agreement. The overall objective is to complete a study that is credible to the global solar industry and meets all international standards notwithstanding all the national legislative imperatives prior to Cabinet's criteria for approval.</p> <p>The collaboration produced a Solar Park Pre-feasibility study report which was approved by the DoE in May 2010 and later endorsed through Cabinet Approval. The report concluded that solar power can be deployed in South Africa in large quantities over the next decade at costs that become competitive with coal-fired power, providing the country with clean and secure energy to help meet its growing demand.</p>	9 October 2009-ongoing	DoE CEF Northern Provincial Government Cape	Chair of PSC. Secure funding.
<b>Ellis Park Precinct Greening Project-MoU</b>	A MoU was signed on Wednesday 17th July 2013 to task SANEDI with the assessment of the Energy, Water and Waste streams within the entire Ellis Park precinct. SANEDI's Carbon and Energy Efficiency audit will be at no	17 July 2013-ongoing	SANEDI	Project management. Funding.

Mechanism	Description / purpose	Lifespan	Role-players	Level of commitment
	cost to GLRU and be inclusive of a feasibility study to generate the 'green-print' that would potentially be applied to all other Stadiums in the country, both big and small, as well as surrounding infrastructure such as factories and streetlights.			
<b>CEC EIP/EMP Sub-Committee</b>	In terms of Section 16(1)(b) of NEMA, every organ of state must report annually within four months of the end of the financial year on the implementation of its adopted EIP or EMP to the Director-General (DG) and the Committee on Environmental Coordination (CEC) Sub-committee on environmental implementation and management plans. Consequently the DoE is required to report annually to the DG of DEAT and the CEC within 4 months of the end of its financial year on the implementation of its adopted EIP or EMP.	1998- Ongoing	Representatives from all Organs of State	<ul style="list-style-type: none"> <li>Attendance at quarterly meeting s.</li> <li>Preparation and submission of annual compliance reports.</li> </ul>
<b>Inter-ministerial Committee on Climate Change</b>	According to the National Climate Change Response White Paper, the Inter-Ministerial Committee (IMCCC) and the IGCCC sub-committee will take responsibility for the development and oversight of the Near-term Priority Flagship Programmes. The appropriate line function Ministry will elaborate on each Near-term Priority Flagship Programme and the responsible Minister will establish teams to create a framework for each programme.		DoE- Minister	<ul style="list-style-type: none"> <li>Participant.</li> </ul>
<b>IEP Steering Committee</b>	The IEP Steering Committee is an inter-departmental government committee led by the DoE and consisting of the departments of Science and Technology; Environmental	2013- ongoing	DoE DST	<ul style="list-style-type: none"> <li>Chair</li> </ul>

Mechanism	Description / purpose	Lifespan	Role-players	Level of commitment
	Affairs; Water and Sanitation; National Treasury; Economic Development; Trade and Industry; Human Settlements; Transport; Rural Development and Land Reform; Mineral Resources and National Planning Commission. The IEP Steering Committee oversees the IEP development process and ensures that legislation, strategies and policies that have an impact upon the energy sector are taken into account. The IEP Steering Committee is supported by various working groups whose focus is on more specific policy issues and, where relevant, the provision of technical input. Industry and community stakeholders are consulted at different stages and through various forums throughout the planning process including public stakeholder workshops, bilateral engagements, and presentations at parliamentary and other energy forums ( Department of Energy, 2013).		DEA DWS NT DED DTI DHS DoT RDLR DMR NPC	
<b>National Nuclear Energy Executive Co-ordination Committee (NNEECC)</b>	The National Nuclear Energy Executive Co-ordination Committee (NNEECC), which comprises ministers from various departments and is chaired by the President, is responsible for taking strategic decisions on the implementation of the nuclear energy policy and is responsible for the oversight and direction of activities for the nuclear energy sector.	Approved by Cabinet in November 2011.	DoE DTI DPE NT DST DBE	<ul style="list-style-type: none"> <li>Participant.</li> </ul>
<b>Nuclear Emergency Planning Steering and Oversight</b>	In accordance with the National Nuclear Disaster Management Plan, the DoE must ensure the establishment of, and Chair, Nuclear Emergency Planning Steering and	Lifespan of Nuclear	DoE: Directorate-	<ul style="list-style-type: none"> <li>Establish an Chair EPSOCs</li> </ul>

Mechanism	Description / purpose	Lifespan	Role-players	Level of commitment
<b>Committees (EPSOC)</b>	Oversight Committees (EPSOC) for relevant nuclear installations as per a formal Terms of Reference.	Installation	Nuclear	
<b>Carbon Capture and Storage Task Team.</b>	The DoE established an Interdepartmental Task Team, which involve all Departments on which CCS cuts across. The CCS Task Team will coordinated different views from policies, acts and regulations of relevant Departments and thus integrate to give the government position. The commitment and progress achieved by South Africa on CCS matters is derived from an ongoing support demonstrated by the International community, both technically and financially. South Africa acknowledges support from the government of Norway and United Kingdom (UK), Agence Francaise de Developpement (AFD) and industry players including Sasol, Eskom, Anglo Coal, Alstom, PetroSA, Total, Xstrata Coal, the European Commission, World Bank, Carbon Sequestration Leadership Forum, International Energy Agency, Global Carbon Capture and Storage and others.		DoE DMR DEA NT DST DTI DWA DPE	<ul style="list-style-type: none"> <li>Co-ordination and chair.</li> </ul>
<b>Co-operative agreement entered into between the NNR and the DEA (Section 6 of the NNR Act) in respect of the monitoring and control of radioactive material or exposure to ionizing radiation.</b>	Section 6 of the NNR Act requires that all organs of state, on which functions in respect of the monitoring and control of radioactive material or exposure to ionizing radiation are conferred by the NNR Act or other legislation, must co-operate with one another in order to amongst others: (a) ensure the effective monitoring and control of the nuclear hazard; (b) co-ordinate the exercise of such functions;	Various agreements.	DoH. DMR. DoE. DWS. DEA. DoT- CAA, RSR, RTMA, SAMSA.	

Mechanism	Description / purpose	Lifespan	Role-players	Level of commitment
	<p>(c) minimise the duplication of such functions and procedures regarding the exercise of such functions; and</p> <p>(d) promote consistency in the exercise of such functions.</p> <p>In accordance with Section 6 (2), the Regulator must conclude a co-operative agreement with every relevant organ of state to give effect to the co-operation contemplated in subsection (1). The NNR has consequently established Co-operative Governance Agreements with the following entities:</p> <ul style="list-style-type: none"> <li>• The Department of Health: Directorate Radiation Control.</li> <li>• The Department of Mineral Regulation: Directorate: Mine, Health and Safety Inspectorate; Directorate: Mineral Regulation.</li> <li>• DoE: Electricity and Nuclear.</li> <li>• Department of Water and Sanitation.</li> <li>• Department of Environmental Affairs.</li> <li>• The Department of Transport: Civil Aviation Authority (CAA); Railways Safety Regulator (RSR); Road Transport Management Authority (RTMA); South African Maritime Safety Authority (SAMSA).</li> <li>• The Department of Labour</li> </ul> <p>Other national cooperation includes: SAPS and NIA.</p>		DoL.	

Mechanism	Description / purpose	Lifespan	Role-players	Level of commitment
<b>Carbon Sequestration Leadership Forum (CSLF)</b>	The Carbon Sequestration Leadership Forum (CSLF) is an international initiative to advance carbon capture and storage (CCS) technology. The Forum is a Ministerial-level organization that includes 23 member countries and the European Commission. Membership is open to national governmental entities that are significant producers or users of fossil fuel and that have a commitment to invest resources in research, development and demonstration activities in carbon dioxide capture and storage technologies. CSLF also recognizes that stakeholders, those organizations that are affected by and can affect the goals of CSLF, form an essential component of CSLF activities.		DoE Other SA Government Departments Various Countries Eskom Sasol PetroSA Anglo American SANEDI, etc..	<ul style="list-style-type: none"> <li>SANEDI is the Vice Chair of the CSLF Technical Group.</li> </ul>
<b>Public Safety and Information forum (PSIF).</b>	The NNR Act includes a requirement to establish a PSIF. There is a further requirement for the PSIF to invite representatives from the relevant local, provincial and national governments in order to inform the persons living in the relevant municipal area in respect of which an emergency plan. Representatives of the NNR and relevant municipality, provincial and national government departments must be invited to attend all meetings.	Lifespan of Nuclear Installation Licence.	NNR Municipal, Provincial and National Government. Holders of a licence for a nuclear installation.	<ul style="list-style-type: none"> <li>NNR is to attend all PSIF meetings (1 per quarter per nuclear installation).</li> </ul>
<b>Clean Energy Ministerial Forum (International)</b>	The Clean Energy Ministerial Forum is a high-level global forum to share best practices and promote policies and programmes that encourage and facilitate the transition to a	2009-	23 countries accounting for 80% of global greenhouse gas	<ul style="list-style-type: none"> <li>Participant.</li> </ul>

Mechanism	Description / purpose	Lifespan	Role-players	Level of commitment
	global clean energy economy.		emissions and 90% of global clean energy investments.	
<b>Green Economy Accord</b>	The promotion of a green economy to aid in the creation of five million jobs by 2020, 12 commitments were identified, including the roll out of 1 million solar water heaters; investment in the green economy; rollout of renewable energy; commitment to energy efficiency; waste recycling, reuse and recovery; Biofuels; clean-coal initiatives; retrofitting; reduction of carbon emissions on the road; electrification of poor communities and economic development of the green through the promotion of localisation, youth -employment and skills development.	2011-2020	Organised labour: COSATU, FEDUSA and NACTU Business represented by Business Unity SA, NAFCOC and FABCOS Community constituents at NEDLAC (organisations of women, civic structure, youth, people with disabilities, cooperatives and the financial sector campaign) Government	The Accord identified a number of commitments that will grow and develop the green economy. This is a high level commitment that is translated into the actions of the DoE.



Mechanism	Description / purpose	Lifespan	Role-players	Level of commitment
<p><b>The Renewable Energy and Energy Efficiency Partnership (REEEP)</b></p>	<p>REEEP is a market catalyst for clean energy in developing countries and emerging markets. REEEP is a network of Regional Secretariats on the ground around the globe ensuring that all activities are locally relevant and focused. SANEDI hosts the REEEP Regional Secretariat for Southern Africa.</p> <p>REEEP aims to facilitate the wide availability of reliable and coherent clean energy information, and to ensure that all information and learnings from REEEP activities are made available in useful and digestible forms.</p>	<p>August 2002-ongoing</p>	<p>DoE SANEDI</p>	<ul style="list-style-type: none"> <li>Participant.</li> </ul>
<p><b>The Energy Efficiency Leadership Network (EELN)</b></p>	<p>The Energy Efficiency Leadership Network (EELN) was launched with the Minister of Energy by the NBI working in partnership with Business Unity South Africa (BUSA) and the DoE in Durban as a side event at COP 17 on 7 December 2011.</p> <p>The main objective of the EELN is to drive the continuous improvement of energy efficiency in the South Africa business sector in support of the appropriate Government policy and strategy, leading to enhanced international competitiveness and greenhouse gas emission reduction. The EELN is also intended to support the business commitment to the Green Accord.</p> <p>The Network will bring energy managers and practitioners together, provide a forum to support company level implementation of the pledge, explore common interests, build capacity, share best practice, exchange information</p>	<p>December 2011-ongoing</p>	<p>DoE SANEDI NERSA CEF PetroSA</p>	<ul style="list-style-type: none"> <li>Participant.</li> </ul>

Mechanism	Description / purpose	Lifespan	Role-players	Level of commitment
<b>Strategic Environmental Assessment (SEA) for Wind and Solar Projects</b>	<p>and seek consensus with their colleagues as well as other industry representatives on mechanisms for improving, measuring and reporting on energy efficiency improvement.</p> <p>The SEAs aim to identify geographical areas best suited for the rollout of wind and solar PV energy projects and the supporting electricity grid network. The process will also provide a platform for coordination between the various authorities who have a mandate in terms of issuing authorisations, consents or permits to allow for a more streamlined process.</p> <p>The aim of this approach would be to enable participating authorities to issue general authorisations, exemptions or delist energy applications within these areas based on certain conditions or adherence to certain identified site specific criteria/standards if required.</p>	January 2013 to December 2014.	DEA DoE	<ul style="list-style-type: none"> <li>Consultative role with the DEA.</li> </ul>
<b>International Renewable Energy Agency (IRENA)</b>	<p>The IRENA is an intergovernmental organisation that supports countries in their transition to a sustainable energy future, and serves as the principal platform for international cooperation, a centre of excellence, and a repository of policy, technology, resource and financial knowledge on renewable energy. IRENA promotes the widespread adoption and sustainable use of all forms of renewable energy, including bioenergy, geothermal, hydropower, ocean, solar and wind energy in the pursuit of sustainable development, energy access, energy security and low-carbon economic growth and prosperity.</p>	Ongoing	DoE	<ul style="list-style-type: none"> <li>Member</li> </ul>

Mechanism	Description / purpose	Lifespan	Role-players	Level of commitment
<b>National Committee on Climate Change</b>	With a mandate from countries around the world, IRENA encourages governments to adopt enabling policies for renewable energy investments, provides practical tools and policy advice to accelerate renewable energy deployment, and facilitates knowledge sharing and technology transfer to provide clean, sustainable energy for the world's growing population.  "The NCCC has been set up to consult with stakeholders from key sectors that impact on or are impacted by climate change. The Committee advises on matters relating to national responsibilities with respect to climate change, and in particular in relation to the UNFCCC and the Kyoto protocol. It also advises on the implementation of climate change-related activities. Government will consider proposals for increasing the functions of the NCCC beyond the current communication function and to formalise its status as an advisory council with statutory powers and responsibilities" (Department of Environmental Affairs, 2011)	2011	DEA DoE	<ul style="list-style-type: none"> <li>DoE Participant and advisory role.</li> </ul>
<b>Biofuels Task Team (BTT)</b>	The BTT is designated with the responsibility of driving the outcomes of the Biofuels Industrial Strategy.	Aligned with the Biofuels Industrial Strategy	DoE (Chair) DoA DLA DEA NT	<ul style="list-style-type: none"> <li>Leading role.</li> </ul>

Mechanism	Description / purpose	Lifespan	Role-players	Level of commitment
			DPW DST PO DTI DWS DoT DPLG	

## 6. SECTION 6: ENVIRONMENTAL MANAGEMENT PRIORITIES

This section prioritises the specific policies, plans and programmes in respect of their alignment with current national sustainable development objectives and national environmental priorities. In addition the alignment with the DoE's core mandate will be described in an effort to focus attention on the key policies, plans and programmes which may, if not complied with, compromise the DoE's ability to execute its environmental management functions.

### 6.1. DEPARTMENTAL AND NATIONAL ENVIRONMENTAL PRIORITIES

Prioritisation of policies, plans and programmes, has been determined by consideration of the following factors:

- Extent to which the relevant policy, programme, and plan aligns with the core environmental functions of the DoE; and
- Extent to which the relevant policy, programme and plan aligns with the core national environmental priorities.

Section 2.3 provides a list of the DoE's functions and specifically highlights those that are anticipated to be core to their environmental management mandate. The national environmental priorities have been obtained from the NDP, the MTSF, the Environmental Outlook, and the NSSD. These are briefly outlined in Table 6.

**TABLE 6: NATIONAL ENVIRONMENTAL PRIORITIES**

Reference	National Environmental Priorities
<b>National Development Plan</b>	<p>The environment sector priorities are driven by the long-term development strategies in Chapter 5 of National Development Plan Vision 2030, namely:</p> <ul style="list-style-type: none"> <li>(a) Sustaining South Africa's ecosystems and using natural resources efficiently.</li> <li>(b) Building sustainable communities.</li> <li>(c) Responding effectively to climate change mitigation.</li> <li>(d) Responding effectively to climate change adaptation.</li> <li>(e) Managing a just transition.</li> <li>(f) Enhancing governance systems and capacity.</li> </ul> <p>These priorities are addressed through the following seven core focus areas:</p> <ul style="list-style-type: none"> <li>(i) Air quality.</li> <li>(ii) Waste and Chemicals Management.</li> <li>(iii) Pollution Incident Management.</li> </ul>

Reference	National Environmental Priorities
	<ul style="list-style-type: none"> <li>(iv) Environmental Impact Management.</li> <li>(v) Conservation and Sustainable Use of biodiversity.</li> <li>(vi) Marine and Coastal Management.</li> <li>(vii) Green economy and sustainable development.</li> </ul>
<b>NSSD</b>	<ul style="list-style-type: none"> <li>(i) Enhancing systems for integrated planning and implementation</li> <li>(ii) Sustaining our ecosystems and using natural resources efficiently</li> <li>(iii) Moving towards a green economy</li> <li>(iv) Building sustainable communities</li> <li>(v) Responding effectively to climate change</li> </ul>
<b>National Environmental Outlook 2005-2025</b>	<ul style="list-style-type: none"> <li>(i) Strengthening implementation and enforcement</li> <li>(ii) Mainstreaming the environment</li> <li>(iii) Building capacity</li> <li>(iv) Environmental information for decision-making</li> <li>(v) Sustainable land management</li> <li>(vi) Sustaining our biodiversity and ecosystems</li> <li>(vii) Improving aquatic ecosystems, water availability and water quality</li> <li>(viii) Using out marine and coastal resources wisely</li> <li>(ix) Atmosphere</li> <li>(x) Creating sustainable human settlements</li> </ul>
<b>MTSF-Outcome 10</b>	<ul style="list-style-type: none"> <li>(i) An effective climate change mitigation and adaptation response</li> <li>(ii) Enhance government systems and capacity</li> <li>(iii) Sustainable human communities</li> </ul>

## 6.2. PRIORITISATION OF DEPARTMENTAL POLICIES, PLANS AND PROGRAMMES

Policies, Plans, Programmes were prioritised in two steps. Step one required that each policy, plan or programme be aligned with the Departments core environmental functions and given a score in terms of how many of the core functions each policy, plan or programme executes. Step two required that the policies, plans or programmes be

aligned with the environmental sector priorities and where given a score in terms of how many of the environmental sector priorities each policy, plan or programme addresses. Figure 2 graphically presents the prioritisation of the department's plans, policies, and programmes with respect to their alignment with both the departmental environmental management functions and secondly the national environmental priorities.

This prioritisation method highlights policies, plans or programmes that should be prioritised.

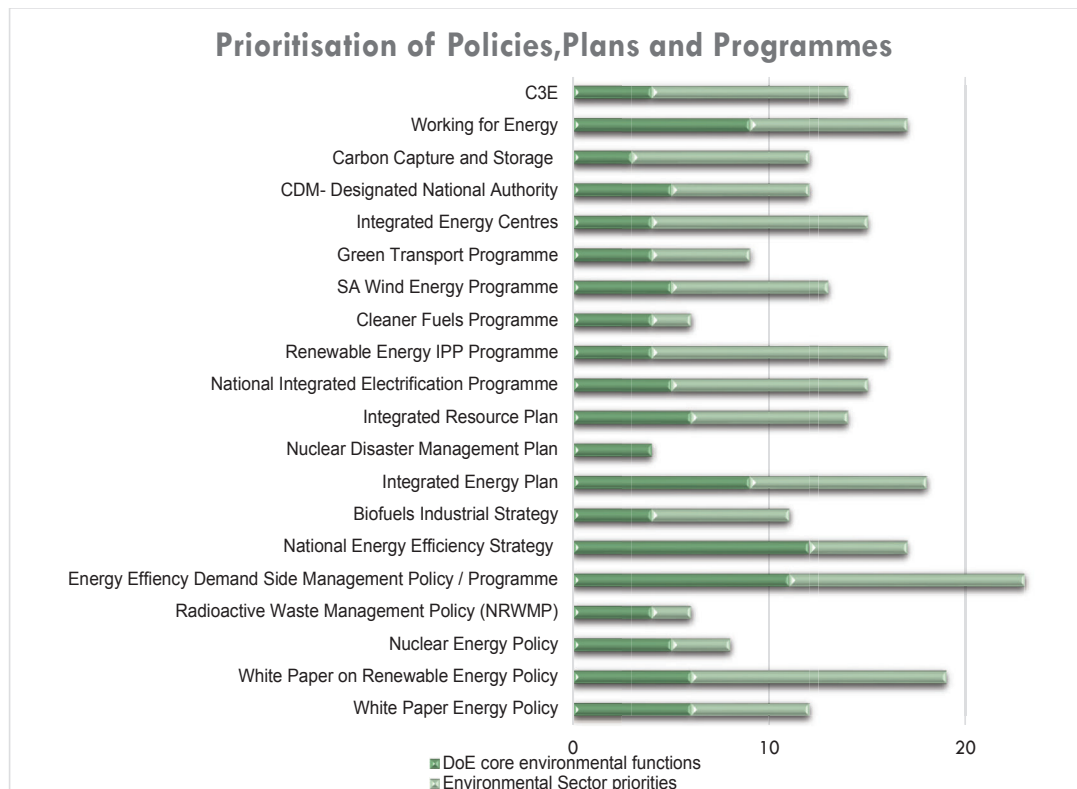


FIGURE 2: PRIORITISATION OF POLICIES, PLANS AND PROGRAMMES.

## 7. SECTION 7: COMPLIANCE

Monitoring of compliance with the EMP is critical to be able to identify progress towards intended results, enhance accountability and learning. The proposed compliance monitoring systems aim to address the following:

- Progress towards stated outcomes;
- Factors contributing to or impeding achievement of the outcomes;
- Opportunities for partnership strategies; and
- Lessons learnt.

### 7.1. CURRENT COMPLIANCE STRUCTURES

The compliance and performance monitoring of the DoE's statutes, policies, plans and programmes with the overall department mandate and with their sustainable development objectives is determined through internal Branch meetings, inter-departmental communication structures, trimester and annual reports, ministerial inquiries or complaints received, and annual EMP reports. Table 7 provides a brief overview of the mechanisms available to the DoE to facilitate effective compliance monitoring and reporting.

**TABLE 7: COMPLIANCE MONITORING MECHANISMS**

Mechanism	Frequency	Responsibility	Outcome
Departmental Annual Reports	Annual	DoE	Annual Reports Published.
EMP Annual Reports	Annual- within 4 months of financial year end.	DoE and its SOEs/SOCs.	Annual reports submitted to the DEA-Section 16 (1b) of Chapter 3 of NEMA.
Monthly inter-Branch meetings	Monthly.	DoE and its SOEs/SOCs.	Meetings are recorded and include: <ul style="list-style-type: none"> <li>• Identification of shortcomings in application of policy and legislation.</li> <li>• Identification of challenges to the application of policy and legislation.</li> </ul>
Ministerial enquiries or complaints	Adhoc	DoE DEA	Record of complaint.
RE-IPP and IPP Programme- Applications-	Ad hoc	DoE	EA



EIA Compliance: In order to submit a bid, the proponent is required to have obtained an EA in terms of the EIA Regulations as well as several additional authorisations or consents.		DEA	
Petroleum Pipeline Act Regulations- prior to any licenced activity being abandoned, relinquished or terminated an EIA is required.	Ad hoc	DoE NERSA DEA	EA or confirmation from DEA of no requirement.

## 7.2. IDENTIFIED COMPLIANCE CHALLENGES

This section provides an indication of the seriousness of compliance to the DoE's policies in so far as they relate to the core environmental functions of the department. Policies, plans and programmes which are core to the department's environmental functions and are not being complied, or are experiencing challenges with, are identified and measures to ensure compliance in the future recommended. The majority of this information is sourced from the Departments Annual Report for 2013-2014 (Department of Energy, 2014) as well as recent presentations to the National Council of Provinces. Table 8 provides an indication of programmes at risk of non-compliance and the challenges each programme faces.

The following high level factors affect the DoE's ability to improve and meet its compliance targets with respect to its environmental management functions:

- Lack of legislative mandate to control and manage all aspects of energy development.
- Lack of a coherent framework for the Government departments to integrate the economic benefits and social challenges of energy development with the objectives of environmentally sustainable development.
- Shortage of specialised technical skills in the Department, including the Regional Offices and in the industry. The 2014/15 APP (Department of Energy, 2014) specifically identifies insufficient capacity/skills shortages in relation to nuclear safeguards compliance inspections, audits and investigations.
- Lack of internal skills and capacity relating to environmental aspects, such as:
  - Monitoring compliance with environmental aspects of licences issued by the DoE and its SOCs and SOEs.
  - Determining the adequacy of mitigation and management and associated financial provisions for environmental rehabilitation.
- Ineffective interdepartmental communication and integration with specific reference to aligning environmental permitting with permitting mandated under the DoE and its SOCs and SOEs.

- Misalignment of environmental legislation and energy legislation (e.g. requirement for Environmental Authorisation to process an energy related authorisation- but in certain instances the activity doesn't trigger the need for an environmental authorisation under NEMA).
- There is a need to allow for cross referencing and verification between the DEA and the DoE Licencing processes to avoid fraudulent applications.
- Poor retention of staff.
- Inability to impact sufficiently on communities.
- Inadequate funding which impacts negatively on other resources. Lack of funds to allow for complete sampling and test for compliance with the Petroleum Product Act was specifically identified in the 2014/15 APP (Department of Energy, 2014).
- SOOG 4 which relates to Universal Access and Transformation: There is a challenge in addressing the backlog challenges in the maintenance of the electricity distribution infrastructure. (Department of Energy, 2014).
- Poor cooperation from other organs of state with regards to the executions of cooperative governance agreements.
- Lack of credible data provision.
- Long turn-around times in the EIA process hinders projects.

The following recommendations are suggested to improve the DoE's ability to improve and meet its compliance targets with respect to the environment:

- A formal dialog needs to be established with the DEA to ensure alignment of the DEA and the DoE's environmental mandates, with specific reference (but not exclusively) to the licencing obligations of the DoE. This dialog should identify the current challenges and propose suitable mechanisms for effective coordination, communication and alignment between the departments (e.g. MoU's, internal capacity development, definition of roles and responsibilities, etc).
- The Department and relevant stakeholders should be made aware of what the EIA process entails so they are better prepared for projects required to undergo an EIA.
- Improve coordination between organs of state for more effective cooperative governance.
- Development of a "road show" to introduce various aspects of sustainable energy to the public.
- Develop a platform for communication between the DoE and interested parties with regards to changes and requirements.

Table 8: Compliance status

Policy, plan and programme	Risk of Non-compliance	Expected State of Compliance	Applicable Entity	Challenges	Compliance target	Management/ mitigation measures
<b>Solar Water Heating Programme</b>	Inability to achieve energy efficiency targets. Inability to meet commitments made under the Green Economy Accord.	<ul style="list-style-type: none"> <li>1 million installations by 2016.</li> <li>80 000 for 2013/14 (only 46 858 achieved) (Department of Energy, 2014).</li> </ul>	DoE Municipalities Eskom	<ul style="list-style-type: none"> <li>Eskom- The turnaround times for concluding contractual arrangements (the DoE-Eskom Memorandum of Agreement) are quite lengthy.</li> <li>Municipalities- lack of participation</li> <li>Other challenges:                             <ul style="list-style-type: none"> <li>Installation of poor quality products.</li> <li>Poor workmanship.</li> <li>Crowding out of locally produced systems by imports.</li> </ul> </li> </ul>	1 000 000 by 2016	<ul style="list-style-type: none"> <li>An implementation agreement had been signed between Eskom and municipalities, which among other things would spell out participation requirements for municipalities, and the satisfaction of municipal and Eskom needs under each individual municipal solar water heater project.</li> <li>A rebate-based geyser Load Reduction Programme, which has quicker turnaround times, will be used to keep the programme going.</li> <li>The DoE's RFRI process has the potential to leapfrog certain Eskom's procurement steps. Co-operation mechanisms should be investigated to build capacity and monitor municipal participation.</li> <li>Revised SWH contracting model to prescribe a minimum local content of 70% for subsidised systems. Such rebate can only be secured if local content has been verified by SABS.</li> </ul>
<b>Integrated Energy Centres</b>	Limits the ability to meet the objective of access to safe and affordable energy resources to poor households. Limits the ability to disseminate	<ul style="list-style-type: none"> <li>2 IEC's per year</li> </ul>	DoE Municipalities DEA	<ul style="list-style-type: none"> <li>Delays on EIA approval and land ownership issues.</li> </ul>	10 IEC's by 2019	<ul style="list-style-type: none"> <li>Initiate dialogue with the DEA regarding available mechanisms to fast track the decision making process for qualifying IEC's.</li> </ul>

Policy, plan and programme	Risk of Non-compliance	Expected State of Compliance	Applicable Entity	Challenges	Compliance target	Management/ mitigation measures
	information and build capacity regarding clean and renewable energy sources.					
<b>Integrated National Electrification Programme (INEP)</b>	Inability to meet commitments made under the Green Accord. Inability to meet the objectives and targets identified in the NDP and MTSF: Sub-outcome 5: Sustainable human communities. Inability to meet the goal of universal access to electricity by all South Africans by 2025.	2014 target: <ul style="list-style-type: none"> <li>200 000 additional households</li> <li>15 000 non-grid connections</li> </ul>	DoE Eskom Municipalities	<ul style="list-style-type: none"> <li>"Funding applications are 6 times higher than available funding.</li> <li>Lack of co-operation and long lead times for municipalities forcing projects to start late in the year.</li> <li>New connections that cannot be made due to lack of network capacity or bad state of infrastructure.</li> <li>Limited oversight capacity within the DoE due to resource constraints.</li> <li>Lack of, or limited technical and managerial capacity in municipalities to plan, procure and manage electrification projects.</li> <li>High turnover of technical and managerial officials within municipalities." (Department of Energy, 2014)</li> </ul>	Universal access to electricity by all South Africans by 2025.	<ul style="list-style-type: none"> <li>Investigate the option of implementing an implementation agreement had been signed between Eskom and municipalities.</li> <li>Source additional human resources.</li> <li>Initiate a capacity building programme for municipalities.</li> </ul>
<b>Renewable Energy Independent Power</b>	Inability to meet the targets specified in the IRP 2010	10 000 GWh of electricity from renewable sources by	DoE NERSA	<ul style="list-style-type: none"> <li>Misunderstanding by stakeholders regarding issues relating to localisation and socio-</li> </ul>	10 000 GWh of electricity from renewable	<ul style="list-style-type: none"> <li>Initiate community and stakeholder consultation.</li> </ul>

Policy, plan and programme	Risk of Non-compliance	Expected State of Compliance	Applicable Entity	Challenges	Compliance target	Management/ mitigation measures
<b>Producers Programme</b>		2013.		<p>economic development timeframes and beneficiaries.</p> <ul style="list-style-type: none"> <li>The need for the department and the developers to intensify engagements and communication with local communities and provincial governments regarding the socio-economic development aspects of these projects.</li> <li>Interventions by different stakeholders in the delivery of the construction process.</li> <li>Delays in connection to the national grid due to grid access constraints.</li> <li>Clarification of the interpretation of certain aspects of the implementation agreements, especially with respect to the manner and information required in terms of reporting by the IPP developers.</li> </ul>	sources by 2013.	
<b>Independent Power Producers</b>	Inability to meet the targets specified in the IRP 2010		DEA	<ul style="list-style-type: none"> <li>Streamline the approval processes for all non-Eskom generation options during the constrained period (as identified in the National Medium</li> </ul>		Ensure DEA and DoE presence within the NMTRMP.

Policy, plan and programme	Risk of Non-compliance	Expected State of Compliance	Applicable Entity	Challenges	Compliance target	Management/ mitigation measures
				Term Risk Mitigation Project-NMTRMP, of the IRP).		

## 8. SECTION 8: IMPLEMENTATION OF INTEGRATED ENVIRONMENTAL MANAGEMENT

Chapter 5 of the National Environmental Management Act, 1998 promotes the “application of appropriate environmental management tools in order to ensure the integrated environmental management (IEM) of activities” (Department of Environmental Affairs, 1998). The purpose of integrated environmental management is to:-

- a) Promote the integration of the principles of environmental management set out in section 2 of NEMA into the making of all decisions which may have a significant effect on the environment;
- b) Identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities , with a view to minimising negative impacts, maximising benefits, and promoting compliance with the principles of environmental management set out in section 2 of NEMA;
- c) Ensure that the effects of the activities on the environment receive adequate consideration before action are taken in connection with them;
- d) Ensure adequate and appropriate opportunity for public participation in decisions that may affect the environment;
- e) Ensure consideration of environmental attributes in management and decision-making which may have a significant effect on the environment;
- f) Identify and employ the modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management set out in section 2 of NEMA.

This section provides brief feedback on the proposed way in which Integrated Environmental Management Tools will be implemented by the DoE to achieve their own environmental mandate. Figure 3 provides an example of the commonly used tools within the IEA toolbox and how they relate to the hierarchy of an activity. Table 9 provides suggestions for which IEM tools may be useful for the DoE to implement.

FIGURE 3: COMMONLY USED TOOLS IN THE IEM TOOLBOX (DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND TOURISM, 2004).

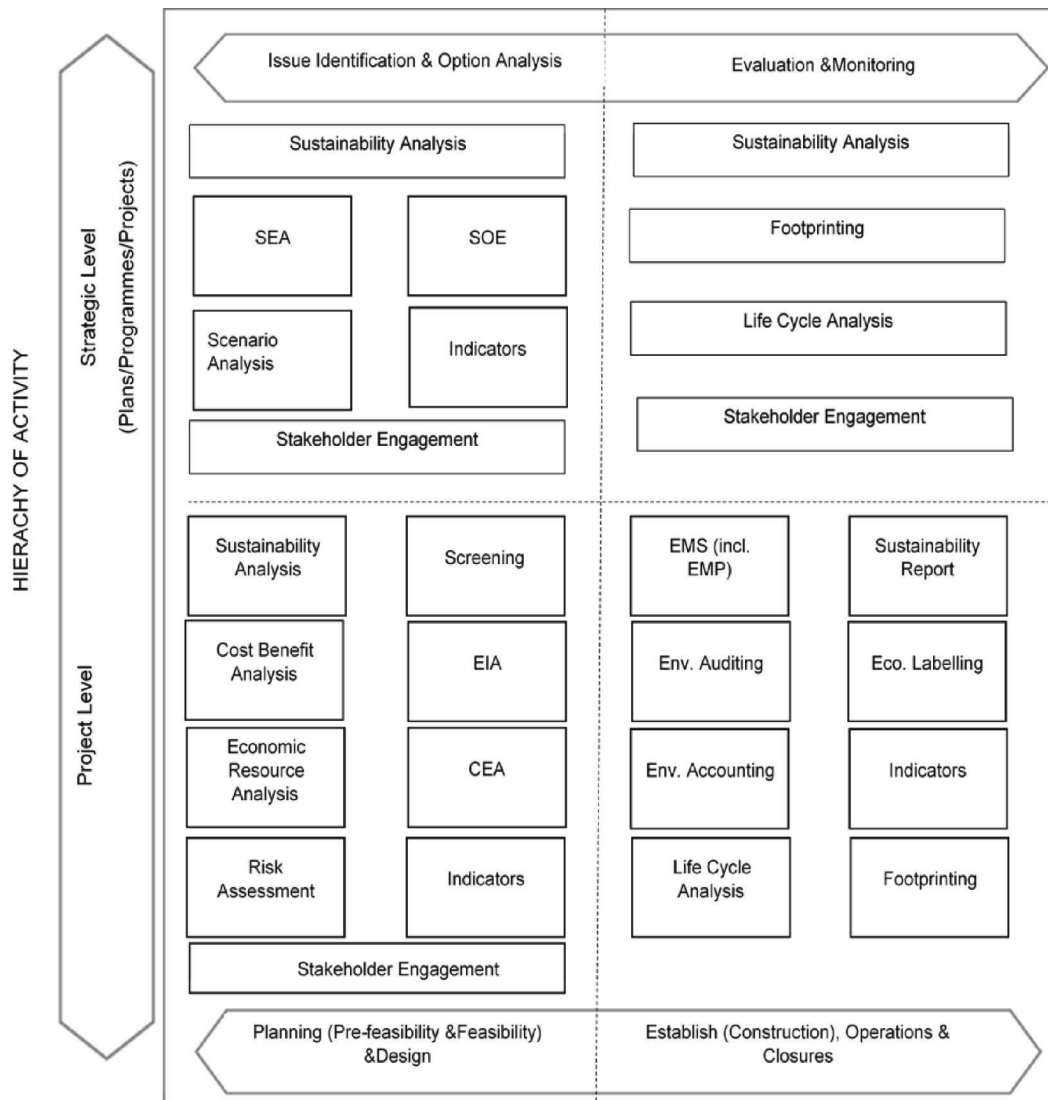


TABLE 9: PROPOSALS FOR IMPLEMENTATION OF IEM TOOLS.

#	IEM Tool	Recommendations for Implementation
1	Strategic Environmental Assessment	<i>“As part of the rollout of renewable energy in South Africa the Department of Energy (DoE) has entered into a bidding process for the procurement of 3725 MW of renewable energy from independent power producers by 2016. This process is known as the Renewable Energy Independent Power Producer Procurement Programme (REIPPP). In order to submit a bid, the proponent is required to have obtained an Environmental Authorisation (EA) in terms of the</i>



		<p><i>Environmental Impact Assessment (EIA) Regulations as well as several additional authorisations or consents.</i></p> <p><i>By December 2012 the national Department of Environmental Affairs (DEA) has received in excess of 500 renewable energy EIA applications and has identified certain inefficiencies in the system. In order to address these inefficiencies the DEA, in discussion with DoE, has been mandated by MinMec to undertake a Strategic Environmental Assessment (SEA).</i></p> <p><i>The DEA subsequently appointed the Council for Scientific and Industrial Research (CSIR) to undertake two respective SEAs for Wind and Solar PV with its supporting electrical grid development in South Africa. The SEAs aim to identify geographical areas best suited for the rollout of wind and solar PV energy projects, referred to as Renewable Energy Development Zones (REDZs), in which to incentivise and streamline wind and solar PV energy development.</i></p> <p><i>During the identification of REDZs consideration is given to a number of aspects including the energy potential, environmental, social, land-use and other characteristics. The SEA process also provides a platform for coordination between the various authorities responsible for issuing authorisations, permits or consents (primarily related to the environment, heritage and land-use) and thereby allows for a more streamlined environmental authorisation process.” (Windaba-Conference, 2014)</i></p> <p>It is understood that the SEA for Wind Energy is far advanced and that an SEA for Solar Energy is also underway. These SEA’s should be completed and the application of the findings of these SEA’s should be made clear to all role-players (DEA, DoE, Proponents, and the Public).</p> <p>In accordance with the requirements of the NNR Regulations the NNR shall lay down, where appropriate, specific requirements relating to the control and/or monitoring of development within the formal emergency planning zone surrounding a specific nuclear installation, after consultation with the relevant provincial and/or municipal authorities and to ensure the effective implementation of any nuclear emergency plan. In this regard there is a need to ensure that these planning zones are considered in any SEA, EMF, or even project level EIA. These zones could be included in the current spatial datasets being made available by the DEA for use by developers and Environmental Assessment Practitioners.</p>
2	Sustainability Analysis and Strategic Environmental Assessment	There are many policies, plans and programmes within the DoE that are due for review in the next 5 year term. It is suggested that relevant strategic level IEM tools are implemented during the process of revisions. Examples could include undertaking a sustainability analysis and/or strategic environmental assessment component within the IRP2, NEES revision, and IEP.
3	Sustainability Reporting	Sustainability Reporting is an organisation’s public account of economic, environmental and social performance in relation to its operations, products and services – i.e. the triple bottom line. The NSSD includes a recommendation that Organs of State should prepare and publish an annual sustainability report (aligned with King III). The DoE and its SOCs and SOEs should prepare annual sustainability reports.
4	Environmental Impact Assessment	Many of the clean energy initiatives being driven by the DoE include activities which are listed in the NEMA EIA regulations as requiring EA. Examples include Biofuels facilities, Renewable Energy Projects, and Integrated Energy Centres. The DoE has indicated that certain of these programmes and initiatives are being delayed due to the EIA process

## 9. SECTION 9: OUTCOMES AND KEY PRIORITY INDICATORS

This section proposes performance assessment indicators to be monitored and reported on for the duration of the EMP (refer to Table 10 through to Table 13). Special efforts will be made to align these with those identified in the NSSD, MTSF, NDP and other relevant national documents. This section also includes directives for monitoring and compliance that will assist in compiling annual compliance reports for the DoE and its entities.

TABLE 10: OUTCOMES AND KEY PRIORITY INDICATORS WITH RESPECT TO THE NSSD

Relevant Policy/ reference	How	Who	Targets	Indicators
<p><b>National Strategy for Sustainable Development (Department of Environmental Affairs, 2011).</b></p> <p>The NSSD 1 sets out key areas that are in need of attention to ensure that a shift takes place towards a more sustainable development path. In this regard, the following key elements have been identified:</p> <ul style="list-style-type: none"> <li>• Directing the development path towards sustainability.</li> <li>• Changing behaviour, values and attitudes.</li> <li>• Restructuring the governance system and building capacity.</li> </ul> <p>The Action Plan that forms part of the strategy is formulated within the context of the five strategic priorities that have been identified in the NSSD 1. It sets out the strategic goals, interventions and indicators for each of these strategic priorities.</p> <p>The following five strategic objectives are identified in the NSSD 1:</p> <ul style="list-style-type: none"> <li>• Enhancing systems for integrated planning and implementation.</li> </ul>	<p><b>National Sustainable Development Indicators</b></p>			
	<ul style="list-style-type: none"> <li>• Engaging with other organs of state to discuss the integration of sustainability principles, outcomes and indicators.</li> <li>• Engage through the Forum of South African Heads of Departments (FOSAD) clusters and intergovernmental structures and forums.</li> <li>• Ensure that DoE and all SOCs and SOEs prepare and publish an annual sustainability report (aligned with King III).</li> <li>• Develop and implement community capacity building projects in specifically the following:                             <ul style="list-style-type: none"> <li>o Clean energy;</li> <li>o Energy efficiency; and</li> <li>o Pollution control (nuclear).</li> </ul> </li> <li>• Reducing the household combustion of various fuels by increasing access to electricity and/or renewable resources.</li> </ul>	<p>DoE</p> <p>DoE</p> <p>DoE</p> <p>DoE</p>	<ul style="list-style-type: none"> <li>• Attend and participate in the NCSO meetings.</li> <li>• Attend and participate in the FOSAD meetings.</li> <li>• DoE to prepare and publish its annual Sustainability Report by 2015 year end.</li> <li>• All SOCs and SOEs to publish annual Sustainability Reports by 2019 year end.</li> <li>• Workshops and campaigns on energy efficiency and renewable energy</li> </ul>	<ul style="list-style-type: none"> <li>• Participation in a National Committee on Sustainable Development (NCSO). Number of engagement sessions attended.</li> <li>• Number of engagement sessions attended.</li> <li>• Number of government entities and private sector companies that release annual sustainability reports.</li> <li>• Number of community based capacity building projects.</li> <li>• Number of households with access to electricity.</li> <li>• Percentage of renewable energy in South Africa's energy mix.</li> <li>• Number of solar home systems installed.</li> </ul>
<ul style="list-style-type: none"> <li>• Sustaining our ecosystems and using natural resources efficiently.</li> <li>• Towards a green economy.</li> </ul>	<ul style="list-style-type: none"> <li>• Implementation of the nine green economy programmes (as identified in the National Green Economy Strategy)- specific relevant interventions are listed:                             <ul style="list-style-type: none"> <li>o Clean Energy and Energy Efficiency:                                     <ul style="list-style-type: none"> <li>• Diversification of energy sources and implementation of energy efficiency programmes as contained in the IRP</li> <li>• Encouraging investment in renewable energy on a scale sufficient large to justify the localisation or competitive technologies along with active support for local renewable technology manufacturing to present an opportunity for sustainable economic development and job creation.</li> </ul> </li> <li>o Environmental Sustainability:                                     <ul style="list-style-type: none"> <li>• Implementation of programmes in research, awareness, training, skills development and knowledge management.</li> </ul> </li> <li>o Sustainable waste management practices:</li> </ul> </li> </ul>	<p>The DoE reports on the number of MW contributing to renewable energy and supports the Department of Economic Development.</p>	<ul style="list-style-type: none"> <li>• 42% (or 17800 MW) by 2030 for renewable energy.</li> <li>• % of non-coal energy sources</li> <li>• % of energy gain from DSM and EE programmes.</li> <li>• 5 public energy awareness campaigns conducted annually.</li> <li>• Co-operative governance with agriculture to ensure food security i.r.t. biofuels.</li> </ul>	<ul style="list-style-type: none"> <li>• # of jobs created by renewable energy projects such as the IRP EEDSM SWH programme</li> <li>• % of locally manufactured goods and services within the renewable energy sector (specifically wind and solar).</li> <li>• National energy split</li> <li>• # of locally produced solar water heaters installed.</li> <li>• # of public energy awareness campaigns.</li> <li>• Number of programmes supported by the Clean Technology Fund.</li> <li>• # of programmes supported by the Green Economy Fund.</li> </ul>

Relevant Policy/ reference	How	Who	Targets	Indicators
	<ul style="list-style-type: none"> <li>Implementation of the waste hierarchy and the ambition to minimise waste and, where unavoidable, recycling and reusing waste or turning it into energy.                             <ul style="list-style-type: none"> <li>Agriculture, food production and forestry:                                     <ul style="list-style-type: none"> <li>Supporting programmes to ensure the protection of agricultural land, sustained food security and local economic development.</li> </ul> </li> </ul> </li> <li>Implement skills development, in particular the youth, in the green economy sector.</li> </ul>	DoE	<ul style="list-style-type: none"> <li>2 Internships completed annually.</li> </ul>	<ul style="list-style-type: none"> <li># of Internships.</li> </ul>
<ul style="list-style-type: none"> <li>Building sustainable communities.</li> </ul>	<ul style="list-style-type: none"> <li>Integration of service provision requirements, including bulk infrastructure, into development planning process.</li> </ul>	DoE	<ul style="list-style-type: none"> <li>Universal access by 2025:                             <ol style="list-style-type: none"> <li>2014 target:                                     <ol style="list-style-type: none"> <li>200 000 additional households</li> <li>15 000 non-grid connections.</li> </ol> </li> <li>2015 target:                                     <ol style="list-style-type: none"> <li>215 000 additional households.</li> <li>20 000 non-grid connections.</li> </ol> </li> <li>2016 target:                                     <ol style="list-style-type: none"> <li>230 000 additional households.</li> <li>30 000 non-grid connections.</li> </ol> </li> </ol> </li> <li>12% by 2015 (energy efficiency target for 2019 to be finalised as outlined in the National Energy Efficiency Action Plan).</li> </ul>	<ul style="list-style-type: none"> <li>% of households with access to electricity.</li> <li>Reduction in electricity consumption in the higher tariff range.</li> </ul>
<ul style="list-style-type: none"> <li>Responding effectively to climate change.</li> </ul>	<ul style="list-style-type: none"> <li>Provision of free minimum services to be combined with demand management for water and electricity.</li> <li>Decrease GHG emissions to levels required by science/in line with cabinet approved targets.</li> <li>Reduce dependency on fossil fuels and enhance security of electricity supply, by amongst others:                             <ul style="list-style-type: none"> <li>10 000 GWh of electricity from renewable sources by 2013.</li> <li>Achieve energy efficiency target of at least 12% by 2015.</li> <li>Use market-based instruments to support environmental fiscal reform (incentives and disincentives).</li> <li>Develop the Integrated Resource Plan (IRP2).</li> <li>Roll out 1 000 000 solar water heaters by 2014.</li> <li>Biofuels strategy to achieve a 2% penetration level of biofuels in the national liquid fuel supply.</li> <li>Implement integrated energy planning.</li> </ul> </li> <li>Build resilience to climate change in communities:                             <ul style="list-style-type: none"> <li>Develop and maintain a GHG emissions information management system in respect of the energy sector.</li> <li>Develop an energy efficiency standard.</li> <li>Develop an energy efficiency methodology and monitoring tool.</li> <li>Develop a renewable energy methodology and monitoring tool.</li> <li>Provide for an Independent Systems</li> </ul> </li> </ul>	<p>The DoE provides support to the Department of Trade and Industry and the Department of Economic Development.</p>	<ul style="list-style-type: none"> <li>42% (or 17800 MW) by 2030 for renewable energy.</li> <li>6% (or 2600 MW) by 2030 for import hydro.</li> <li>12% by 2015 (energy efficiency target for 2019 to be finalised as outlined in the National Energy Efficiency Action Plan).</li> </ul>	<ul style="list-style-type: none"> <li>MWh of renewable energy electricity contributing to the national grid.</li> <li>MWh of electricity saved through energy efficiency and demand side management interventions.</li> </ul>
	<ul style="list-style-type: none"> <li>Build resilience to climate change in communities:                             <ul style="list-style-type: none"> <li>Develop and maintain a GHG emissions information management system in respect of the energy sector.</li> <li>Develop an energy efficiency standard.</li> <li>Develop an energy efficiency methodology and monitoring tool.</li> <li>Develop a renewable energy methodology and monitoring tool.</li> <li>Provide for an Independent Systems</li> </ul> </li> </ul>	DoE	<ul style="list-style-type: none"> <li>Development of a GHG emissions information management system in the energy sector.</li> <li>Development and implementation of appropriate standards and guidelines and codes of practice for the appropriate use of renewable energy technologies.</li> <li>Designation and establishment of an Independent Systems Operator-</li> </ul>	<ul style="list-style-type: none"> <li>Development of a GHG emissions information management system in the energy sector.</li> <li>Guidelines and codes of practice for the appropriate use of renewable energy technologies- developed and implemented.</li> <li>Promulgation of ISMO Bill and Act.</li> <li>Publish rules on selection criteria for renewable energy projects under the REEF programme.</li> <li>Develop a climate change adaptation plan.</li> </ul>

Relevant Policy/ reference	Outcomes to be achieved	How	Who	Targets	Indicators
		<ul style="list-style-type: none"> <li>Operator to control and operate the transmission system.</li> <li>Finalise power purchase agreement.</li> <li>Enhance the ability of various sectors to manage and adapt to impacts of climate change.</li> </ul>		<ul style="list-style-type: none"> <li>promulgate ISMO Bill by 2015.</li> <li>Development of climate risk management systems for priority adaptation sectors.</li> </ul>	

TABLE 11: OUTCOMES AND KEY PRIORITY INDICATORS WITH RESPECT TO THE NDP

Relevant Policy/ reference	Outcomes to be achieved	How	Who	Targets	Indicators
National Development Plan (Chapter 5) (National Planning Commission, 2011) and Medium Term Strategic Framework (The Presidency of the Republic of South Africa, 2014)	<ul style="list-style-type: none"> <li>Sub-outcome 2: An effective climate change mitigation and adaptation response.</li> </ul>	<ul style="list-style-type: none"> <li>Strategic Policy/ Regulatory frameworks and programmes to promote a low carbon economy.</li> <li>Monitor, report and verify GHG emissions.</li> </ul>	DoE	<ul style="list-style-type: none"> <li>42% (or 17800 MW) by 2030 for renewable energy.</li> <li>6% (or 2600 MW) by 2030 for import hydro.</li> <li>12% by 2015 (energy efficiency target for 2019 to be finalised as outlined in the National Energy Efficiency Action Plan).</li> <li>All energy carriers to publish biennial calorific value.</li> <li>Yearly energy balances (5)</li> </ul>	<ul style="list-style-type: none"> <li>% new build that is renewable power generation (to incorporate off-grid energy).</li> <li>% of energy efficiency improvement.</li> <li>Biennial calorific value for all energy carriers published.</li> </ul>
	<ul style="list-style-type: none"> <li>Sub-outcome 3: An environmentally sustainable, low-carbon economy resulting from a well-managed just transition.</li> </ul>	<ul style="list-style-type: none"> <li>Progressively develop, compile, transparently and accessibly report on a set of sustainable development indicators and underlying natural resource and pollution emission indicators.</li> </ul>	<ul style="list-style-type: none"> <li>All DoE SOCs and SOEs.</li> </ul>	<ul style="list-style-type: none"> <li>Performance indicators developed by 2015.</li> <li>Published by 2017.</li> </ul>	<ul style="list-style-type: none"> <li>Annual energy balances provided to support compilation of the GHG inventory.</li> <li>Environmentally sustainable development performance indicators developed.</li> <li>SA Environmentally Sustainable Development Indicators published.</li> </ul>
	<ul style="list-style-type: none"> <li>Sub-outcome 5: Sustainable human communities.</li> </ul>	<ul style="list-style-type: none"> <li>Expand use of renewable energy through off-grid electrification.</li> </ul>	DoE	<ul style="list-style-type: none"> <li>15MW off-grid renewable energy</li> <li>105 000 solar home systems</li> </ul>	<ul style="list-style-type: none"> <li>MW of renewable energy deployed off-grid.</li> <li>Number of solar home systems (PV) installed.</li> </ul>

TABLE 12: OUTCOMES AND KEY PRIORITY INDICATORS WITH RESPECT TO THE DEPARTMENTS CORE ENVIRONMENTAL FUNCTIONS

Relevant Policy/ reference	Outcomes to be achieved	How	Who	Targets	Indicators
<b>Department Core Environmental Functions</b>	The Departments core environmental functions are listed in 2.3. This section aims to outline the identified outcomes and related indicators applicable to the core environmental functions of the Department in respect of the existing relevant policies, plans and programmes. These are primarily identified within the strategic objectives of the DoE as encompassed in the Revised Strategic Plan (2011/12 - 2015/16).				
Biofuels Industrial Strategy of the Republic of South Africa	<ul style="list-style-type: none"> <li>The Strategy is targeted at creating jobs in the energy-crop and biofuels value chain, and to act as a bridge between the first and second economy.</li> <li>Biofuels can contribute towards the achievement of the renewable energy goals; energy security and the reduction of greenhouse gas emissions.</li> </ul>	<ul style="list-style-type: none"> <li>The Biofuels Strategy initially aims to develop the biofuels industry to achieve a penetration of 2% of the national liquid fuel supply.</li> <li>Implement and monitor the Mandatory Blending Regulations. Which includes the requirement for, amongst others:                             <ul style="list-style-type: none"> <li>Biofuels producers, need to obtain a manufacturing licence.</li> <li>Biofuels producers will have to meet the licensing condition which will include amongst others, crop selection, feedstock availability, quality requirements, environmental standards (Environmental Impact Assessment) and water restrictions.</li> </ul> </li> </ul>	DoE CEF	<ul style="list-style-type: none"> <li>2% biofuels penetration in the national liquid fuel supply by 2013.</li> <li>Development of a biofuel Implementation Plan</li> <li>Develop mechanisms and/or incentives for public entities which utilise large volumes of fuel, to encourage the use of Biofuels in their fuel mix.</li> <li>Establish and chair the Biofuels Implementation Committee (as envisaged by the draft position paper on South African biofuels regulatory framework-2014).</li> <li>Conclude the Biofuels Pricing Framework (as envisaged by the draft position paper on South African biofuels regulatory framework-2014).</li> <li>Gazette the Biofuels pricing regulations - 2014.</li> <li>Implement the Biofuels pricing regulations - 2015 onwards.</li> </ul>	<ul style="list-style-type: none"> <li>% biofuels penetration in national liquid fuel supply.</li> <li>Biofuel Implementation Plan developed and implemented.</li> <li>Value of investment in Biofuels Projects by or through the CEF.</li> <li>% of bio-fuel used by public entities.</li> <li># of meetings of the Biofuels Implementation Committee.</li> <li>Biofuels Pricing Regulations Gazetted.</li> </ul>
Integrated Energy Centre (IEC) Programme	<ul style="list-style-type: none"> <li>It is envisaged that the IEC's will:                             <ul style="list-style-type: none"> <li>Provide access to safe and affordable energy resources to poor households.</li> <li>Provide access to information regarding the safe, efficient and environmentally sustainable use of energy sources.</li> <li>Promote the SMME sector and job opportunities through energy related businesses.</li> <li>Provide access to energy safe appliances.</li> <li>Influence policy on both the public and private sectors regarding access to safe and affordable energy.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>The objectives of the IEC programme will be implemented through the establishment of retail energy facilities and information centres. The DoE has the specific responsibilities of:                             <ul style="list-style-type: none"> <li>project facilitation;</li> <li>energy needs analysis, and</li> <li>Assisting with site &amp; retail license.</li> </ul> </li> </ul>	Petroleum Products Controller falling within the DDG Petroleum and Petroleum Products Regulation.	<ul style="list-style-type: none"> <li>Compliance with the regulations (effective from October 2015) by:                             <ul style="list-style-type: none"> <li>All Biofuels producers to be licensed by end of year 2016.</li> <li>All licenced Biofuels producers to have specified quality assurance certificates.</li> </ul> </li> <li>10 IEC's established by 2019 (2 per year).</li> </ul>	<ul style="list-style-type: none"> <li># of licenced bio-fuels manufacturers.</li> <li># of compliance inspections conducted.</li> <li># of fuel samples tested.</li> <li># of prosecutions in respect of non-compliance with the regulations.</li> <li># of new operational IEC's established.</li> </ul>
Carbon Capture and Storage Strategy and Action Plan	<ul style="list-style-type: none"> <li>The South African Centre for Carbon capture and Storage (SACCCS) has been established in 2009. The mission of the SACCCS is to prepare and promote the construction and operation of a safe and reliable Carbon Capture and Storage Demonstration Plant in South Africa by developing in-country human and technical capacity.</li> <li>The primary objectives are:                             <ul style="list-style-type: none"> <li>Implementing work programmes to enable the design and implementation and operation of a CCS demonstration plant.</li> <li>Promoting and advocating the use of CCS as part of GHG mitigation solution for</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>The road map of the centre and South Africa's programme for CCS is envisaged in five phases:                             <ul style="list-style-type: none"> <li>Phase 1 - Preliminary Potential Investigation: A preliminary investigation was undertaken by the CSIR for the then Department of Minerals and Energy to ascertain whether South Africa had potential sequestrable carbon dioxide sources and storage sites.</li> <li>Phase 2- Geological Storage Atlas: The aim of the atlas was to identify the potential geological storage of carbon dioxide.</li> <li>Phase 3- Pilot Carbon Dioxide Storage Project/CO3 Injection Experiment: The test injection of carbon dioxide into South African</li> </ul> </li> </ul>	DoE	<ul style="list-style-type: none"> <li>CCS test injection by 2016.</li> <li>Develop CCS Regulations.</li> <li>Participate in the CCS Inter-departmental Task Team (see co-operative governance section of this Table).</li> </ul>	<ul style="list-style-type: none"> <li>Volume of CO<sub>2</sub> sequestered and injected.</li> <li>Promulgation of CCS Regulations.</li> </ul>

Relevant Policy/ reference	Outcomes to be achieved	How	Who	Targets	Indicators
National Energy Efficiency Strategy.	<p>South Africa using stakeholder engagement and public outreach activities.</p> <ul style="list-style-type: none"> <li>Engaging with Stakeholders to promote alignment of SACCOS strategy and objectives.</li> <li>Establishing new, and leveraging existing international linkages to advance the work and activities of SACCOS.</li> <li>Raising funds for the SACCOS and later, for more commercially oriented CCS activities (test injection and demonstration plant).</li> <li>Developing a SACCOS corporate image and branding.</li> </ul> <p>The strategy of SACCOS is to develop and implement a roadmap for the commercial application of CCS in South Africa</p>	<p>rocks is essential to the understanding of the suitability of the local geology as a storage medium (inject 10s thousands of tonnes). It is also necessary to ascertain the dispersion and reactions of the carbon dioxide in the storage medium.</p> <ul style="list-style-type: none"> <li>Phase 4- Demonstration Plant: The test injection of carbon dioxide into South African rocks is essential to the understanding of the suitability of the local geology as a storage medium (inject 10s thousands of tonnes). It is also necessary to ascertain the dispersion and reactions of the carbon dioxide in the storage medium.</li> <li>Phase 5- Commercial Operation: Should all of the above phases be successful, then a commercial plant is envisaged.</li> </ul> <p>The first two phases of the project are complete with phase three scheduled to begin in 2016/2014. In parallel with the above five phases, intensive support research and creation of human capacity encompassing the following will be undertaken by the SACCOS:-</p> <ul style="list-style-type: none"> <li>Capture technologies</li> <li>Transport technologies</li> <li>Geological storage technologies</li> <li>Monitoring and verification</li> <li>Remediation technologies</li> <li>Risk assessments</li> <li>Legal and regulatory regimes</li> <li>Public outreach/awareness</li> </ul> <p>The Strategy makes use of a range of generic implementing instruments, which are applied as appropriate to meet specific needs within each Sector Programme. These generic instruments include:</p> <ul style="list-style-type: none"> <li>Support mechanisms;</li> <li>Policy, Mandate and Governance;</li> <li>Financial Instruments;</li> <li>Stakeholder interaction.</li> </ul> <p>The Strategy implementation provides for a phase approach. The current strategy covers the period 2005 to 2015 (February) and is therefore nearing completion. A 2008 review was undertaken and a 2012 review is in the process of being finalised. The targets specified in the 2008 review will be presented herein.</p> <ul style="list-style-type: none"> <li>Energy Efficiency Tax incentive regulations in terms of Section 12L of the Income Tax Act.</li> </ul>	DoE	<ul style="list-style-type: none"> <li>12% energy intensity reduction improvement by 2015.</li> <li>Finalise NEES second review-2014.</li> <li>Finalise Standard for Energy Management (SANS50001).</li> <li>Finalise Energy Efficiency Regulations.</li> <li>Finalise National Energy Efficiency Action Plan.</li> </ul>	<ul style="list-style-type: none"> <li>Energy intensity</li> <li>Promulgation of revised NEES</li> </ul>
Energy Efficiency and Demand Side Management Policy and Programme	<p>This policy focuses on the management of the electricity demand through energy efficiency interventions within the residential, commercial and industrial sectors. Amongst the outcomes to be achieved through the EEDSM policy are:</p> <ul style="list-style-type: none"> <li>Quick power system relief</li> <li>Relative cost effectiveness;</li> <li>Quick deployment of interventions across the residential, commercial and industrial sectors to create SHIME opportunities and quality employment;</li> <li>Mitigation of greenhouse gas emissions and the resultant climate change impacts;</li> </ul>	<ul style="list-style-type: none"> <li>Energy Efficiency Tax incentive regulations in terms of Section 12L of the Income Tax Act.</li> </ul>	SANEDI  DoE Provinces and Municipalities	<ul style="list-style-type: none"> <li>Develop energy consumption baselines for 10 municipalities by 2014.</li> <li>Develop energy consumption baselines for additional 30 municipalities by 2015.</li> <li>Develop energy consumption baselines for additional 80 municipalities by 2016.</li> <li>Set the Energy Efficiency Resource Standard.</li> </ul>	<ul style="list-style-type: none"> <li>Annual energy efficiency savings expressed in kilowatt hours.</li> <li>Energy consumption baselines for municipalities.</li> <li># of municipalities participating in the EEDSM programme.</li> <li>Annual energy savings expressed in kilowatt hours.</li> </ul>



Relevant Policy/ reference	Outcomes to be achieved	How	Who	Targets	Indicators
Solar Water Heating Programme	<ul style="list-style-type: none"> <li>Participants will realise relief from their energy bills.</li> <li>Facilitation and incentivisation for the roll-out of solar water heating systems.</li> </ul>	<ul style="list-style-type: none"> <li>Rebate</li> </ul>	DoE	<ul style="list-style-type: none"> <li>129 679 SWH's installed in 2014</li> <li>169 700 SWH's installed in 2015</li> <li>169 138 SWH's installed in 2016.</li> <li>4 million total by 2030 (NDP)</li> </ul>	<ul style="list-style-type: none"> <li># of SWH's installed.</li> </ul>
Integrated Resource Plan 2010	<p>The IRP is a National Electricity Plan, a subset of the Integrated Energy Plan that directs the expansion of the electricity supply over the given period.</p> <p>The IRP refers to the co-ordinated schedule for generation expansion and demand-side intervention programmes, taking into consideration multiple criteria to meet electricity demand. The IRP aims to co-ordinate the generation capacity to meet the projected future demands whilst considering the applicable policy directives.</p> <ul style="list-style-type: none"> <li>The IRP relates to the management in the environment in that it guides our future electricity generation and by considering emissions as defining criteria, assists in fulfilling South Africa's commitments to mitigating climate change as expressed at the Copenhagen climate change summit. Constraints considered in the IRP not only included carbon emissions but also reductions in water usage.</li> </ul>	<p>The IRP gives effect to the following policy objectives:</p> <ul style="list-style-type: none"> <li>10000 Gwh (approximately 4% of the energy mix of renewable energy by 2013)</li> <li>The implementation of Energy Efficient and Demand Side Management through financial incentive scheme (the standard offer policy)</li> <li>Installation of one million solar water heaters.</li> </ul>	DoE	<ul style="list-style-type: none"> <li>IEP to be approved by Cabinet by 2015.</li> <li>Develop revised/ updated IRP.</li> <li>10,000 Gwh of renewable energy by 2013.</li> <li>3 725 MW of renewable energy 2016</li> <li>Achieve energy efficiency target of at least 12% by 2015.</li> <li>Roll out 1 000 000 solar water heaters by 2014.</li> </ul>	<ul style="list-style-type: none"> <li>MWh of renewable energy electricity contributing to the national grid.</li> <li>MWh of electricity saved through energy efficiency and demand side management interventions.</li> <li># of solar water heaters installed.</li> </ul>
Designated National Authority Project (Clean Development Mechanism)	<p>CDM projects provide the opportunity for developed countries to implement project activities that reduce emissions in non-developed countries, in return for carbon credits.</p> <p>Regulations were promulgated under Section 25 of the NEMA establishing the Designated National Authority (DNA). These regulations established the DNA within the DoE and provides the DNA with its legal mandate to oversee the Clean Development Mechanism (CDM) in South Africa.</p> <p>The main task of the DNA is to assess potential CDM projects to determine whether they will assist South Africa in achieving its sustainable development goals and to issue formal host country approval where this is the case.</p>	<p>The CDM fulfils its mandate through the following actions:</p> <ul style="list-style-type: none"> <li>Approving potential CDM projects.</li> <li>Provide support to project developers and play a part in promoting South Africa as an attractive location for potential CDM investors.</li> <li>Assist prospective CDM developers in identifying local CDM opportunities.</li> </ul>	NERSA	<ul style="list-style-type: none"> <li>Promulgate Policies for:                             <ul style="list-style-type: none"> <li>Standard offer scheme for solar water heaters by 2014.</li> <li>Standard offer scheme for reducing energy in the building envelope by 2015.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Promulgated Standard Offer Policies.</li> </ul>
South African Solar Energy Technology Road Map (SETRM) (Department of Energy, 2014)	<p>The South African Solar Energy Technology Road Map (SETRM) is being developed to provide a comprehensive, aligned, achievable and time bound strategic plan that will help guide: policy and regulatory development, industrial strategy and related investment, education and skills programme development, innovation, research and development; and the overall diffusion of solar technologies in the country, and given the country's significant regional impact, in the broader Southern Africa region. The objectives of the SETRM include:</p> <ul style="list-style-type: none"> <li>Develop a clear, comprehensive, and prioritized implementation plan (i.e. roadmap) for the development and diffusion of concentrated solar power, solar photovoltaic technology (ies); solar heating and cooling technologies; and related R &amp; D in South</li> </ul>	<p>The development process of the South African SETRM involves four key phases: Planning and Preparation; Visioning; Roadmap Development; and Roadmap Review and Validation.</p>	DoE	<ul style="list-style-type: none"> <li>Finalise SETRM.</li> </ul>	<ul style="list-style-type: none"> <li>SETRM finalised and published.</li> </ul>

Relevant Policy/ reference	Outcomes to be achieved	How	Who	Targets	Indicators
Integrated National Electrification Programme	Africa toward reduced energy use, carbon emissions reduction, distributed electricity generation, expanded independent power production and electricity supply to the national grid, and the reduction of reliance on carbon fuels. The purpose of the INEP is to reach universal access to electricity by all South Africans by 2025.	<ul style="list-style-type: none"> <li>The INEP aims to achieve its goal by:                             <ul style="list-style-type: none"> <li>Managing the electrification planning, funding and implementation process</li> <li>Providing capital subsidy to both Eskom and municipalities to address the electrification backlog of permanent occupied residential dwellings, the installation of bulk infrastructure and the rehabilitation and refurbishment of electricity infrastructure in order to extend the access of electricity.</li> </ul> </li> </ul>	DoE	<ul style="list-style-type: none"> <li>Universal access by 2025.                             <ul style="list-style-type: none"> <li>2014 target:                                     <ul style="list-style-type: none"> <li>200 000 additional households</li> <li>15 000 non-grid connections.</li> </ul> </li> <li>2015 target:                                     <ul style="list-style-type: none"> <li>215 000 additional households</li> <li>20 000 non-grid connections.</li> </ul> </li> <li>2016 target:                                     <ul style="list-style-type: none"> <li>230 000 additional households</li> <li>30 000 non-grid connections.</li> </ul> </li> </ul> </li> <li>Establish steering committees with all provinces.</li> </ul>	<ul style="list-style-type: none"> <li># of additional households electrified.</li> <li># of non-grid connections.</li> <li>Participation within provincial steering committees.</li> </ul>
Cleaner Fuels Programme	This programme which includes the Clean Fuels Road Map, aims to bring South Africa in line with Euro 5 fuel specification standards by 2017, through the reduction of sulphur to 10ppm as well as reductions in benzene, aromatics and olefins	<ul style="list-style-type: none"> <li>The programme objectives are being driven through the fuel specifications and standards. The regulations aim to reduce the harmful emissions associated with diesel and petrol.</li> </ul>	Petroleum Products Controller falling within the DDG Petroleum and Regulation.	<ul style="list-style-type: none"> <li>Compliance with regulated fuel specifications- specifically compliance with Cleaner Fuels 2 regulations (Euro V emission standard) from 2017.</li> <li>The Controller should carry out inspections and testing Compliance with the</li> </ul>	<ul style="list-style-type: none"> <li># of fuel samples tested.</li> <li># of prosecutions in respect of non-compliance with the regulations.</li> </ul>
Radioactive waste management policy (NRWMP)	The policy aims to ensure the establishment of a comprehensive radioactive waste governance framework by formulating, additional to nuclear and other applicable legislation, a policy and implementation strategy. The National Radioactive Waste Management Policy and Strategy lays down options to be considered for managing used fuel and high-level waste. The policy development, and application is driven by certain principles. The following selection of these principles relates to the management of the environment: <ul style="list-style-type: none"> <li>Protection of the Environment: Radioactive waste shall be managed in such a way as to provide an acceptable level of protection of the environment.</li> <li>Polluter pays principle: The financial burden for the management of radioactive waste shall be borne by the generator of that waste.</li> <li>Precautionary principle: Where there are threats of serious irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation (Rio Principle 15).</li> </ul> Environmentally responsible waste management is critical to give effect to the constitutional right to an environment that is not harmful to health and well-being.	<ul style="list-style-type: none"> <li>The Minister will consult with other government departments and regulatory bodies to develop and maintain a national action plan.</li> <li>Government shall establish the NCRWM. The NCRWM shall:                             <ul style="list-style-type: none"> <li>Review and recommendation of steinindustry specific Radioactive Waste Management Plans (RWMP).</li> <li>Monitor the implementation of Radioactive Waste Management Plans.</li> <li>Recommend to the Minister the issuing of management directives to NRWMA as appropriate.</li> <li>Coordinate radioactive waste management research and development activities of national interest.</li> <li>The NCRWM shall, as and when appropriate, publish a report in respect of radioactive waste management on the basis of information received, validated and processed by the various NCRWM members.</li> </ul> </li> <li>The primary tool for monitoring compliance will be through RWMP. Approved waste management plans shall be reviewed and re-submitted at a predetermined frequency.</li> <li>Government and the Minister must establish a NRWMA.</li> </ul>	DoE NNR	<ul style="list-style-type: none"> <li>Participate in NCRWM.</li> <li>Establishment and Implementation of NRWMA (now known as NRWD).</li> <li>Develop a Radioactive Waste Management Fund (RWMP)- Promulgate Bill for long-term radioactive waste management fund by 2016.</li> </ul>	<ul style="list-style-type: none"> <li>Participation in NCRWM.</li> <li>Establishment of NRWDI.</li> <li>Promulgation of Bill for long-term radioactive waste management fund.</li> </ul>
Integrated Energy Plan			DoE	<ul style="list-style-type: none"> <li>Develop and publish the Gas Utilisation Master Plan.</li> </ul>	<ul style="list-style-type: none"> <li>Published Gas Utilisation Master Plan.</li> </ul>

Relevant Policy/ reference	Outcomes to be achieved	How	Who	Targets	Indicators
Clean Energy Education and Empowerment (C3E –SA) initiative	<ul style="list-style-type: none"> <li>To attract and inspire women.</li> <li>To pursue careers and support their advancement into leadership positions in clean energy.</li> <li>To create entrepreneurship opportunities in the field of clean energy.</li> <li>To encourage lifestyles that support clean energy.</li> <li>To raise awareness on clean energy as a preferred source of energy.</li> </ul>	The C3E Strategic Plan (2013/14 – 2017/18) provides a comprehensive list of interventions and actions required to achieve the goals of the C3E initiative. Please refer to this document separately.	DoE	The C3E Strategic Plan (2013/14 – 2017/18) provides a comprehensive list of annual and quarterly targets required to achieve the goals of the C3E initiative. Please refer to this document separately.	The C3E Strategic Plan (2013/14 – 2017/18) provides a comprehensive list of indicators applicable to the identified targets required to achieve the goals of the C3E initiative. Please refer to this document separately.

TABLE 13: OUTCOMES AND KEY PRIORITY INDICATORS WITH RESPECT TO THE DEPARTMENT'S CORPORATE GOVERNANCE MECHANISMS

Relevant Policy/ reference	Outcomes to be achieved	How	Who	Targets	Indicators
<b>Co-operative Governance</b> CEC EIP/EMP Sub-Committee	This section aims to identify key priority indicators applicable to ensuring that the performance of the identified co-operative governance structures are monitored.  <ul style="list-style-type: none"> <li>To promote the integration and coordination of environmental functions by the relevant organs of state and in particular, to promote the purpose and objectives of environmental management plans.</li> </ul>	<ul style="list-style-type: none"> <li>The DEA is responsible for co-ordinating and chairing the CEC. All organs of state who have functions which relate to the management of the environment should participate.</li> </ul>	DoE	<ul style="list-style-type: none"> <li>Attend all CEC at quarterly meetings.</li> </ul>	<ul style="list-style-type: none"> <li>Attendance records (4 per year).</li> </ul>
Co-operative agreement entered into between the NNR and the DEA (Section 6 of the NNR Act) in respect of the monitoring and control of radioactive material or exposure to ionizing radiation	<ul style="list-style-type: none"> <li>To promote and ensure co-operation between all organs of state, on which functions in respect of the monitoring and control of radioactive material or exposure to ionizing radiation are conferred by the NNR Act or other legislation in order to, amongst others:                             <ul style="list-style-type: none"> <li>ensure the effective monitoring and control of the nuclear hazard;</li> <li>co-ordinate the exercise of such functions;</li> <li>minimise the duplication of such functions and procedures regarding the exercise of such functions; and</li> <li>promote consistency in the exercise of such functions.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>The NNR (Regulator) must conclude a co-operative agreement with every relevant organ of state to give effect to the co-operation contemplated in subsection (1) of the NNR Act.</li> <li>The NNR have the following concluding agreements with organs of state:                             <ol style="list-style-type: none"> <li>The Department of Health Directorate: Radiation Control</li> <li>The Department of Mineral Resources Directorate: Mine, Health and Safety Inspectorate</li> <li>Department of Energy Directorate: Mineral Regulation Electricity and Nuclear</li> <li>The Department of Transport                                     <ol style="list-style-type: none"> <li>Civil Aviation Authority (CAA)</li> <li>Railways Safety Regulator (RSR)</li> <li>Road Transport Management Authority (RTMA)</li> <li>South African Maritime Safety Authority (SAMSA)</li> </ol> </li> <li>Department of Water Affairs.</li> <li>Department of Environmental Affairs and Tourism.</li> </ol> </li> </ul>	NNR	<ul style="list-style-type: none"> <li>Conclude agreements with all relevant organs of state.</li> </ul>	<ul style="list-style-type: none"> <li># of agreements concluded.</li> </ul>
Public Safety and Information Forum (PSIF)	<ul style="list-style-type: none"> <li>The NNR Act requires all holders of a nuclear licence to establish and maintain a PSIF in order to inform the persons living in the relevant municipal area in respect of which an emergency plan has been established in terms of section 38(1) of the Act on nuclear safety and radiation safety matters (including emergency planning) related to the relevant nuclear installation.</li> <li>The NNR is a key role player in monitoring nuclear installations.</li> <li>PSIF Meetings are held on a quarterly basis.</li> </ul>	<ul style="list-style-type: none"> <li>Holders of a Nuclear Installation Licence must invite the NNR to attend PSIF's.</li> </ul>	NNR	<ul style="list-style-type: none"> <li>Attend all PSIF meetings for licenced Nuclear Installations.</li> <li>4 meetings for NECSA per annum.</li> <li>4 meetings for Koeberg per annum.</li> </ul>	<ul style="list-style-type: none"> <li>% of PSIF meetings attended calculated as a percentage of number of nuclear installations multiplied by 4 (quarterly meetings per installation).</li> </ul>
Nuclear Emergency Planning Steering and Oversight Committee (EPSOC)	<ul style="list-style-type: none"> <li>The DoE is the "National Organ of State" for coordination and management of matters related to nuclear disaster management at national level.</li> </ul>	<ul style="list-style-type: none"> <li>The DoE must ensure the establishment of, and chair Nuclear EPSOCs for relevant nuclear installations.</li> </ul>	DoE: Chief Directorate- Nuclear	<ul style="list-style-type: none"> <li>Establish an EPSOC for all relevant nuclear installations.</li> <li>Chair all Nuclear EPSOCs.</li> <li>Develop a revised Nuclear Disaster Management Plan which considered the lessons learnt from the Fukushima Nuclear incident.</li> </ul>	<ul style="list-style-type: none"> <li>% of Nuclear EPSOCs meetings chaired calculated as a percentage of number of nuclear EPSOCs (annual meetings per EPSOC)</li> <li>Updated Nuclear Disaster Management Plan.</li> </ul>
National Nuclear Energy Executive Coordination	<ul style="list-style-type: none"> <li>A committee that will be responsible for the oversight and direction of activities for the nuclear energy sector.</li> </ul>		DoE: Chief Directorate- Nuclear	<ul style="list-style-type: none"> <li>Establish the NNEECC and NETC</li> </ul>	<ul style="list-style-type: none"> <li>Gazetting of NNEECC and NETC.</li> </ul>

Relevant Policy/Reference	Outcomes to be achieved	How	Who	Targets	Indicators
<p>Committee (NNECC) and associated Nuclear Energy Technical Committee (NETC)</p> <p>Clean Energy Ministerial Forum</p>	<ul style="list-style-type: none"> <li>High-level global forum to share best practices and promote policies and programmes that encourage and facilitate the transition to a global clean energy economy.</li> </ul>	<ul style="list-style-type: none"> <li>Annual ministerial meetings to:                             <ul style="list-style-type: none"> <li>Advance international collaboration to accelerate the adoption of clean energy policies and practices worldwide.</li> <li>To assess progress and guide work under the concrete and transformative clean energy initiatives.</li> <li>Provide an opportunity for high-level engagement with private-sector.</li> </ul> </li> <li>International collaboration under the Clean Energy Ministerial (CEM) is action-oriented and flexible; there are no negotiated texts or binding agreements. The CEM is based on a distributed leadership approach where any government interested in furthering a substantive idea on a clean energy technology or issue is encouraged to identify willing partners and proceed.</li> </ul>	DoE; Chief Directorate- Clean Energy	<ul style="list-style-type: none"> <li>Attendance and participation at the CEM Meetings (6-10).</li> </ul>	<ul style="list-style-type: none"> <li># of representatives attending.</li> <li>Attendance at annual CEM (6 – 10)</li> </ul>
<p>South African Solar Energy Technology Road Map (SETRM)-Steering Committee</p>	<ul style="list-style-type: none"> <li>The objectives of the SETRM are: To develop a clear, comprehensive, and prioritized implementation plan (i.e. roadmap) for the development and diffusion of concentrated solar power, solar photovoltaic technology (pv); solar heating and cooling technologies; and related R &amp; D in South Africa toward reduced energy use, carbon emissions reduction, distributed electricity generation, expanded independent power production and electricity supply to the national grid, and the reduction of reliance on carbon fuels.</li> <li>The Project Steering Committee (PSC) oversees the development of the SETRM to ensure that all critical aspects are covered. In general, the PSC is mandated to provide advice, expertise, and guidance and make recommendations to the DoE and the Department of Science and Technology during the development of the roadmap.</li> </ul>	<ul style="list-style-type: none"> <li>All members of the PSC are expected to actively participate in the development of the SETRM, either directly or through sub-committees. Members include relevant Government Ministries as well as other local and international institutions.</li> <li>The PSC meets monthly on the third Wednesday of each month and the meetings are co-chaired by the DoE and the DST. The PSC meetings are to be attended by at least one representative from each participating organisation or department.</li> <li>The DoE, supported by the DST, provides Secretariat Services to the SETRM PSC and in the event that sub-committees are established, the Secretariat also assists these units by providing administrative support and compiling reports.</li> <li>Lastly, SETRM envisions the establishment of various Sub-committees comprised of members of the PSC and people/ institutions from outside the PSC with relevant knowledge and expertise who are invited to perform specific tasks to accomplish the common goal of developing a SETRM for South Africa.</li> </ul>	DoE	<ul style="list-style-type: none"> <li>Establish sub-committees.</li> <li>Arrange, chair and attend monthly SETRM PSC meetings- 12 per year.</li> </ul>	<ul style="list-style-type: none"> <li># of Sub-committees established.</li> <li># of SETRM PSC meetings held.</li> </ul>
<p>Green Economy Accord- New Growth Plan Dialogues</p>	<ul style="list-style-type: none"> <li>This Accord marks a key point in the partnership between the South African government, business community, trade union movement and community organisations.</li> <li>The parties have identified a number of commitments they each can make on growing and developing the green economy, and which are set out in this Accord.</li> <li>Commitment 1: Rollout of Solar Water Heaters (SWH)</li> <li>Commitment 3: Rollout of Renewable Energy</li> </ul>	<ul style="list-style-type: none"> <li>In facilitating this co-operation the parties will, in the framework of the New Growth Path dialogue, meet on a regular basis to review progress and to assess what changes and additions are required to the Accord and its follow-up.</li> <li>Such meetings will be held at least twice a year.</li> </ul>	DoE	<ul style="list-style-type: none"> <li>Participation in New Growth Path Dialogue Meetings- 2 meetings per year.</li> </ul>	<ul style="list-style-type: none"> <li># of New Growth Path Dialogue meetings attended.</li> </ul>
		<ul style="list-style-type: none"> <li>Align commitment with the Solar Water Heater Rebate Programme (SWHRP).</li> <li>Carry out an awareness campaign to promote the new legislative requirements for solar water heaters.</li> </ul>	DoE	<ul style="list-style-type: none"> <li>1 million SWH installed at household level by 2014.</li> <li>Determine current % of locally manufactured components.</li> <li>Set a 2019 target for % localisation within the SWHRP by 2016.</li> </ul>	<ul style="list-style-type: none"> <li># of solar water heaters installed within the SWHRP.</li> <li>% local manufacture of components within the SWHRP.</li> </ul>
		<ul style="list-style-type: none"> <li>Expand procurement of renewable energy as part of the plan to expand the energy generation</li> </ul>	DoE	<ul style="list-style-type: none"> <li>Supply of 3 725MW renewable energy by 2016.</li> </ul>	<ul style="list-style-type: none"> <li>MWh of renewable energy electricity contributing to the national grid.</li> </ul>

Relevant Policy/ reference	Outcomes to be achieved	How	Who	Targets	Indicators
	<ul style="list-style-type: none"> <li>capacity of the country, aligned with the IRP.</li> <li>Increase local industrial manufacture of components for renewable energy.</li> <li>Provide policy certainty in the replacement scheme for co-generation projects.</li> </ul>	<ul style="list-style-type: none"> <li>Develop a Policy on Co-generation by 2019.</li> </ul>		<ul style="list-style-type: none"> <li>Co-generation Policy formalised.</li> </ul>	
	<ul style="list-style-type: none"> <li>Commitment 4: Energy Efficiency</li> </ul>	<ul style="list-style-type: none"> <li>Implement the National Energy Efficiency Strategy (NEES).</li> <li>Develop an Energy efficiency Campaign for public awareness.</li> </ul>	DoE	<ul style="list-style-type: none"> <li>See NEES targets.</li> <li>See EELN targets</li> <li>Develop and implement an Energy Efficiency Campaign.</li> </ul>	<ul style="list-style-type: none"> <li>See NEES indicators.</li> <li>See EELN indicators</li> <li># of Energy Efficiency Campaign events.</li> </ul>
	<ul style="list-style-type: none"> <li>Commitment 6: Biofuels</li> </ul>	<ul style="list-style-type: none"> <li>Implementation of the mandatory blending regulations.</li> <li>Establish a task team of relevant Government Departments and industry representatives to consider the challenges and opportunities of different agricultural feedstock's.</li> </ul>	DoE	<ul style="list-style-type: none"> <li>See Bio-fuels Industrial Strategy targets.</li> <li>Establish a bio-fuels task team.</li> </ul>	<ul style="list-style-type: none"> <li>See Bio-fuels Industrial Strategy indicators.</li> <li># of engagements of the bio-fuels task team.</li> </ul>
	<ul style="list-style-type: none"> <li>Commitment 7: Clean coal initiatives</li> </ul>	<ul style="list-style-type: none"> <li>Establish CSLF.</li> <li>Support the Majuba Underground Coal Gasification (UCG) Initiative.</li> <li>Explore the CCS initiatives</li> </ul>	DoE	<ul style="list-style-type: none"> <li>See CSLF Targets.</li> <li>See Carbon Capture and Storage Strategy targets.</li> </ul>	<ul style="list-style-type: none"> <li>See CSLF indicators.</li> <li>See Carbon Capture and Storage Strategy indicators.</li> </ul>
	<ul style="list-style-type: none"> <li>Commitment 8: Retrofitting</li> </ul>	<ul style="list-style-type: none"> <li>Establish regulatory measures to progressively phase out incandescent lighting.</li> </ul>	<ul style="list-style-type: none"> <li>SANEDI</li> <li>DoE</li> </ul>	<ul style="list-style-type: none"> <li>Develop a phase out strategy for incandescent lighting.</li> </ul>	<ul style="list-style-type: none"> <li>Incandescent lighting phase out strategy.</li> </ul>
	<ul style="list-style-type: none"> <li>Commitment 10: Electrification of poor communities and reduction of fossil-fuel open fire cooking and heating.</li> </ul>	<ul style="list-style-type: none"> <li>Accelerating the increase of access to modern energy carriers- electrification programme.</li> <li>Support switching to modern thermal carriers such as LP Gas for cooking and space heating.</li> </ul>	DoE	<ul style="list-style-type: none"> <li>See INEP targets.</li> <li>Formalise the Gas Master Plan.</li> </ul>	<ul style="list-style-type: none"> <li>See INEP indicators.</li> <li>Formalised Gas Master Plan.</li> </ul>
	<ul style="list-style-type: none"> <li>Commitment 11: Economic Development in the green economy; promotion of localisation, you employment, cooperatives and skills development.</li> </ul>	<ul style="list-style-type: none"> <li>Government to convene a meeting of stakeholders to quantify the skills required over the next 5 years in the green economy. Consequently to work with colleges, universities and training institutions in the private sector to provide the required training programmes.</li> </ul>	DoE	<ul style="list-style-type: none"> <li>Participate in a stakeholder meeting.</li> </ul>	<ul style="list-style-type: none"> <li>Record of participation in stakeholder meeting.</li> </ul>
Renewable Energy and Energy Efficiency Partnership (REEEP)	<ul style="list-style-type: none"> <li>REEEP aims to facilitate the wide availability of reliable and coherent clean energy information, and to ensure that all information and learnings from REEEP activities are made available in 'useful and digestible forms.</li> </ul>	<ul style="list-style-type: none"> <li>Participation in REEEP provides access to funding for clean energy projects as well as access to information and international experience.</li> </ul>	<ul style="list-style-type: none"> <li>SANEDI</li> </ul>	<ul style="list-style-type: none"> <li>Continue to host the REEEP Regional Secretariat for Southern Africa.</li> <li>Access funding for local clean energy projects.</li> </ul>	<ul style="list-style-type: none"> <li>Regional Secretariat for REEEP Southern Africa.</li> <li>Rand value of funding accessed through the REEEP partnership.</li> </ul>
Kyoto Protocol- Conference of the Parties. The Marrakesh Accord and Marrakesh Declaration.	<ul style="list-style-type: none"> <li>The Marrakesh Accords and Declaration is a framework for capacity-building in developing countries that sets out the scope of, and provides the basis for action on, capacity-building related to the implementation of the Convention and preparation for the effective participation of developing countries in the Kyoto Protocol process; that will, in a coordinated manner, assist them in promoting sustainable development while meeting the objective of the Convention. Serves as a guide for the Global Environment Facility as an operating entity of financial mechanism, and be considered by multilateral and bilateral organisations in their capacity-building activities related to the implementation of the Convention and preparation for their effective participation in the Kyoto Protocol process.</li> </ul>	<ul style="list-style-type: none"> <li>Monitoring and recording of emissions.</li> <li>The Accords also established "operating procedures, eligibility criteria, roles and responsibilities of parties and role-players and definitions.</li> <li>Provide approvals on CDM projects.</li> <li>Conduct yearly Conference of the Parties (COP) to discuss and achieve a legally binding and universal agreement on climate, from all the nations of the world.</li> </ul>	DoE	<ul style="list-style-type: none"> <li>Attend annual COP (COP 21 in 2015).</li> </ul>	<ul style="list-style-type: none"> <li>Participation at the COP's.</li> </ul>
Solar parks Memorandum of Understanding (MoU)	<ul style="list-style-type: none"> <li>This MoU between the DoE (represented by the CEF) and the Clinton Climate Initiative (CCI) focused on preparing a pre-feasibility study assessing the potential of developing one or more Solar Parks in South Africa.</li> </ul>	<ul style="list-style-type: none"> <li>The project operates under oversight of the Programme Steering Committee (PSC) chaired by the DoE.</li> <li>Key decisions on this initiative are made in line with the CEFD/DOE Policies and an Implementation Agreement.</li> <li>The collaboration produced a Solar Park Pre-</li> </ul>	CEF DoE	<ul style="list-style-type: none"> <li>Complete feasibility study for development of Northern Cape solar park by 2014.</li> </ul>	<ul style="list-style-type: none"> <li>Completed feasibility study.</li> </ul>

Relevant Policy/ reference	Outcomes to be achieved	How	Who	Targets	Indicators
Ellis Park Precinct Greening Project- MoU	<ul style="list-style-type: none"> <li>A MoU was signed to task SANEDI with the assessment of the Energy, Water and Waste streams within the entire Ellis Park precinct.</li> </ul>	<p>feasibility study report which was approved by the DoE in May 2010 and later endorsed through Cabinet Approval. The report concluded that solar power can be deployed in South Africa in large quantities over the next decade at costs that become competitive with coal-fired power, providing the country with clean and secure energy to help meet its growing demand.</p> <ul style="list-style-type: none"> <li>Conduct a carbon and energy efficiency audit and be inclusive of a feasibility study to generate the 'green-print' that would potentially be applied to all other Stadiums in the country, both big and small, as well as surrounding infrastructure such as factories and streetlights.</li> </ul>	SANEDI	<ul style="list-style-type: none"> <li>Completion of carbon and energy efficiency audit.</li> <li>Completion of feasibility study.</li> </ul>	<ul style="list-style-type: none"> <li>% complete- carbon and energy audit.</li> <li>% complete- feasibility study.</li> </ul>
The Energy Efficiency Leadership Network (EELN)	<ul style="list-style-type: none"> <li>The main objective of the EELN is to drive the continuous improvement of energy efficiency in the South Africa business sector in support of the appropriate Government policy and strategy, leading to enhanced international competitiveness and greenhouse gas emission reduction. The EELN is also intended to support the business commitment to the Green Accord.</li> <li>The Network will bring energy managers and practitioners together, provide a forum to support company level implementation of the pledge, explore common interests, build capacity, share best practice, exchange information and seek consensus with their colleagues as well as other industry representatives on mechanisms for improving, measuring and reporting on energy efficiency improvement.</li> </ul>	<ul style="list-style-type: none"> <li>Attend capacity building &amp; reporting working groups</li> <li>Support performance reporting &amp; knowledge sharing – facilitated through quarterly EELN meeting.</li> </ul>	DoE SANEDI NERSA CEF PetroSA	<ul style="list-style-type: none"> <li>Retain membership for existing DoE members.</li> <li>Aim for 100% membership by the DoE and its SOCs and SOEs by 2017.</li> <li>Appoint suitably qualified representatives to attend quarterly EELN meetings.</li> </ul>	<ul style="list-style-type: none"> <li>EELN membership.</li> <li>Qualification of designated representatives.</li> <li>Attendance at quarterly meetings.</li> </ul>
Inter-ministerial Committee on Climate Change (IMCCC)	<ul style="list-style-type: none"> <li>The Committee will exercise oversight over all aspects of the implementation of the National Climate Change Response Green Paper.</li> </ul>	<ul style="list-style-type: none"> <li>Facilitate inter- ministerial participation on all aspects of climate change.</li> </ul>	DoE- Minister	<ul style="list-style-type: none"> <li>Participate in IMCCC.</li> </ul>	<ul style="list-style-type: none"> <li>Participation in IMCCC.</li> </ul>
National Committee on Climate Change	<ul style="list-style-type: none"> <li>The NCCC has been set up to consult with stakeholders from key sectors that impact on or are impacted by climate change. The Committee advises on matters relating to national responsibilities with respect to climate change, and in particular in relation to the UNFCCC and the Kyoto protocol. It also advises on the implementation of climate change-related activities.</li> </ul>	<ul style="list-style-type: none"> <li>DoE is a participant in an advisory role.</li> </ul>	DoE	<ul style="list-style-type: none"> <li>Participation in NCCC.</li> </ul>	<ul style="list-style-type: none"> <li>Participation in NCCC.</li> </ul>
Carbon capture and Storage (CCS) Task Team	<ul style="list-style-type: none"> <li>The CCS Task Team will coordinate different views from policies, acts and regulations of relevant Departments and thus integrate to give the government position.</li> </ul>	<ul style="list-style-type: none"> <li>CCS is a cross cutting issue and will need synergy, cooperation, coordination and participation of relevant departments to work collectively on CCS matters. The task team aims to achieve this co-operation.</li> </ul>	DoE	<ul style="list-style-type: none"> <li>Arrange and participate in regular Task Team Meetings.</li> <li>Produce a discussion paper outlining the proposed milestones for CCS framework development in South Africa.</li> </ul>	<ul style="list-style-type: none"> <li>Participation in task team meetings- # of meetings</li> <li>% progress on actions identified by the task team.</li> </ul>
Biofuels Task Team (BTT)	<ul style="list-style-type: none"> <li>The BTT is designated with the responsibility of driving the outcomes of the Biofuels Industrial Strategy.</li> </ul>	<ul style="list-style-type: none"> <li>Drive various initiatives in line with the Biofuels Industrial Strategy, including:                             <ul style="list-style-type: none"> <li>Interdepartmental coordination.</li> <li>Technology standards and research and development.</li> <li>Land use planning.</li> <li>Farmer outreach.</li> </ul> </li> </ul>	DoE	<ul style="list-style-type: none"> <li>Arrange and participate in regular Task Team Meetings.</li> </ul>	<ul style="list-style-type: none"> <li>Participation in task team meetings- # of meetings</li> <li>% progress on actions identified by the task team.</li> </ul>
International Renewable Energy	<ul style="list-style-type: none"> <li>The IRENA aims to achieve a platform for international cooperation, a centre of</li> </ul>	<ul style="list-style-type: none"> <li>IRENA provides a range of products and services, including:</li> </ul>	DoE	<ul style="list-style-type: none"> <li>10,000 GWh of renewables produced by 2013.</li> </ul>	<ul style="list-style-type: none"> <li>MWh of renewable energy electricity contributing to the national grid.</li> </ul>

Relevant Policy/ Agency (IRENA)	Outcomes to be achieved	How	Who	Targets	Indicators
	<p>excellence, and a repository of policy, technology, resource and financial knowledge on renewable energy. IRENA promotes the widespread adoption and sustainable use of all forms of renewable energy, including bioenergy, geothermal, hydropower, ocean, solar and wind energy in the pursuit of sustainable development, energy access, energy security and low-carbon economic growth and prosperity.</p>	<ul style="list-style-type: none"> <li>Renewable Readiness Assessments, conducted in partnership with governments and regional organisations, to provide policy guidance and facilitate the sharing of case studies and best practices;</li> <li>the Global Renewable Energy Atlas, hosted on the IRENA website, which maps solar, wind sources country by country;</li> <li>the IRENA Renewable Energy Learning Partnership (IRELP), an online learning network;</li> <li>Handbooks for renewable energy policy development;</li> <li>Technology briefs and cost studies to strengthen evidence-based policy-making and investment;</li> <li>Facilitation of renewable energy planning at regional levels;</li> <li>Renewable Energy Country Profiles.</li> </ul>		<ul style="list-style-type: none"> <li>3,100 MW of renewable capacity by 2013, including 500 MW of wind and 50 MW of concentrating solar power.</li> <li>4% of electricity generation from renewables by 2013.</li> <li>13% of electricity generation from renewables by 2020.</li> </ul>	



## 10. SECTION 10: REFERENCES

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**ANNEXURE A: SOC AND SOE VISION, MISSION AND VALUES**

Table 14: SOC and SOE vision, mission and values

Company/ Entity	Mandate	Mission	Vision	Values
<b>CEF</b>	<p>Governed by the Central Energy Fund Act, 1977 (Act No. 38 of 1977), CEF researches, finances, develops &amp; exploits appropriate energy solutions across the spectrum of energy sources to meet South Africa's future energy needs. It is also mandated to manage the Equalisation Fund, which collects levies from the retail sales of petroleum products to eliminate unnecessary fluctuations in the retail price of liquid fuel &amp; to give tariff protection to the synthetic fuel industry.</p> <p>Objectives of the Mandate:</p> <ol style="list-style-type: none"> <li>To effectively and efficiently manage the energy business for the benefit of all South Africans.</li> <li>CEF will play an active role in the governance and planning of all its subsidiaries, and will strategically co-ordinate the long-term future of the group.</li> <li>To improve energy security of supply through diversifying sources and by building and managing strategic energy stocks and an energy</li> </ol>	<p>To grow the energy sector to be the catalyst for the economic growth and poverty alleviation through security of supply, and access to affordable energy in Africa.</p>	<p>To be a leader in the financing, development and implementation of sustainable energy projects in Africa.</p>	<ul style="list-style-type: none"> <li>High standards of environmental awareness and responsibility. It is CEF's policy to conduct all its activities in such a way as to take account of the health and safety of all persons and to give due regard to the conservation of the environment.</li> <li>Business integrity: CEF and the staff of CEF conduct their business dealings in a cost effective manner, with declaration, always protecting the interests of the company, fostering the good name of the CEF, with high ethical values and standards.</li> <li>Respect for people and organisations: CEF aims to be fair and considerate in their treatment of fellow employees by cultivating healthy business relationships while scrupulously avoiding conflicts of interest and being co-operative and constructive in all that they do.</li> <li>Communication with the employees: CEF subscribes</li> </ul>

Company/ Entity	Mandate	Mission	Vision	Values
	<p>infrastructure.</p> <ol style="list-style-type: none"> <li>4. To develop and invest in renewable and alternative energy sources and in energy efficiency.</li> <li>5. To develop human capacity and invest in relevant R&amp;D.</li> <li>6. To manage and optimally exploit local strategic energy and related resources.</li> <li>7. To mitigate environmental impacts and maximise sustainable development.</li> </ol>			<p>to the concept of openness, fairness, relevance and promptness in communications. CEF also believes that the best interests of the company should be considered when applying the concept of openness, as disclosures may not be appropriate in all circumstances and in certain instances these may be in conflict with legal or regulatory requirements.</p> <ul style="list-style-type: none"> <li>• Employee participation: CEF believes in establishing participative structures at various levels for handling issues, which affect employees directly and materially. These structures are intended to seek consensus on such matters and this is facilitated by an established employee forum.</li> <li>• Consultation with employees: The transparent sharing of relevant information, identification and resolution of conflict can also enhance good employee relations. There must also be consultation about decisions that materially and directly affect employees, except where this is prohibited by law or regulation or if doing so</li> </ul>

Company/ Entity	Mandate	Mission	Vision	Values
<p><b>NECSA</b></p>	<p>In terms of Section 13 the Nuclear Energy Act (Act No. 46 of 1999), NECSA's mandate is to:</p> <ul style="list-style-type: none"> <li>• Undertake and promote research and development (R&amp;D) in the field of nuclear energy and radiation sciences and technology and, subject to the Safeguards Agreement, to make these generally available;</li> <li>• Process source material, special nuclear material and restricted and to reprocess and enrich source and nuclear material;</li> <li>• Co-operate with any person or institution in matters falling within these functions, subject to the approval of the Minister.</li> </ul> <p>The Act provides for the commercialisation of nuclear and related products and services, and delegates specific responsibilities to corporation, including the implementation and execution of national safeguards and other international obligations.</p>	<p>To develop, utilise and manage nuclear technology for national and regional socio-economic development through:</p> <ul style="list-style-type: none"> <li>• Applied R&amp;D;</li> <li>• Commercial application of nuclear and associated technology;</li> <li>• Fulfilling the State's nuclear obligations;</li> <li>• Contributing to the development of skills in science and technology;</li> <li>• Total commitment to health, safety and care for the environment;</li> <li>• Developing and empowering our human resource base;</li> <li>• Satisfying stakeholder expectations.</li> </ul>	<p>To pursue nuclear technology excellence for sustainable social and economic development.</p>	<p>would adversely affect the wellbeing of CEF.</p> <ul style="list-style-type: none"> <li>• Shareholder reporting: CEF will report honestly, accurately, appropriately and timeously to the Board and shareholders on the performance and prospects of the company.</li> <li>• Foundational integrity, accountability, innovation, orientation.</li> <li>• Business values- excellence, stakeholder orientation.</li> <li>• People values- trust, people orientation.</li> </ul>

Company/ Entity	Mandate	Mission	Vision	Values
<b>NERSA</b>	<p>Objectives of the Mandate:</p> <ol style="list-style-type: none"> <li>Nuclear Power Cluster that undertakes nuclear fuel development and production, as well as projects and services in support of the SA Nuclear Power Programme.</li> <li>Radiation Science and Applications Cluster delivers radiation sciences research services and develops products and services for the industry, including isotopes for the medical sector.</li> <li>NECSA, as host of the Nuclear Programmes Cluster, refers to NECSA's services to house nuclear programmes, due to its unique integrated Safety, Health, Environment and Quality (SHEQ) system, licensed nuclear infrastructure and specialised supporting services.</li> </ol> <p>NERSA is mandated to undertake the functions of the National Regulator as set out in the Electricity Regulation Act, 2006 (Act no 4 of 2006), undertake the functions of the Gas Regulator as set out in the Gas Act, 2001 (Act No. 48 of 2001), undertake the functions of the Petroleum Pipelines Regulatory Authority as set out in the Petroleum Pipelines Act, 2003 (Act No. 60 of 2003) and to perform such other functions as may be assigned to it by or under these Acts.</p>	To regulate the energy industry in accordance with government laws, policies, standards and international best standards in support of sustainable development.	To be a world-class leader in energy regulation.	<ul style="list-style-type: none"> <li>Passion: Business is conducted with a sense of urgency and commitment and are proud to be part of NERSA.</li> <li>Spirit of Partnership: In work with all our stakeholders we deliver on our promises for the purpose of sustainable development.</li> <li>Excellence: In striving for the best results, growth is promoted as well as the development of staff and it benchmarks NERSA against</li> </ul>

Company/ Entity	Mandate	Mission	Vision	Values
	<p>Objectives of the Mandate:</p> <ol style="list-style-type: none"> <li>1. Regulatory investment in environment facilitates energy infrastructure.</li> <li>2. Supply is certain and secure for current and future user needs.</li> <li>3. Fair competition exists within the energy industry.</li> <li>4. Ensure existence of regulatory certainty within the energy industry.</li> <li>5. Energy is accessible and affordable for all citizens.</li> <li>6. NERSA is established and positioned as a credible and reliable regulator.</li> </ol>			<p>the "best-in-class" energy regulators across the globe.</p> <p>Innovation: As a learning organisation, NERSA strives to set trends and promote creativity by challenging the norm in order to continuously improve.</p> <ul style="list-style-type: none"> <li>• Integrity: being honest, fair and sincere with all stakeholders and amongst ourselves.</li> <li>• Responsibility: NERSA practices responsibility and takes ownership of their actions and decisions.</li> <li>• Professionalism: NERSA encourages the maintenance of high standards of professional competence and interdependence between our teams using effective communication channels to treat everybody as stakeholders.</li> </ul>
<b>NNR</b>	<p>The NNR operates within the following framework: Constitution of the Republic of South Africa of 1996 (Act No. 108 of 1996), Nuclear Energy Act (Act No. 46 of 1999), National Nuclear Regulator Act (Act No. 47 of 1999), Public Finance Management Act No. 1 of 1999 (PFMA), National Treasury Regulation (TR), Nuclear Energy Policy, Radioactive Waste Management Policy and Strategy</p>	<p>To provide and maintain an effective and efficient national regulatory framework for the protection of persons, property and nuclear damage.</p>	<p>To be an independent world class regulatory authority on nuclear safety.</p>	<ul style="list-style-type: none"> <li>• Professionalism: The NNR holds themselves accountable to the highest standards of professionalism in everything they do.</li> <li>• Integrity: Demonstration of integrity and ethical conduct in all they do.</li> <li>• Excellence: striving for excellence in all that they do.</li> <li>• Valuing People: They demonstrate that the value</li> </ul>

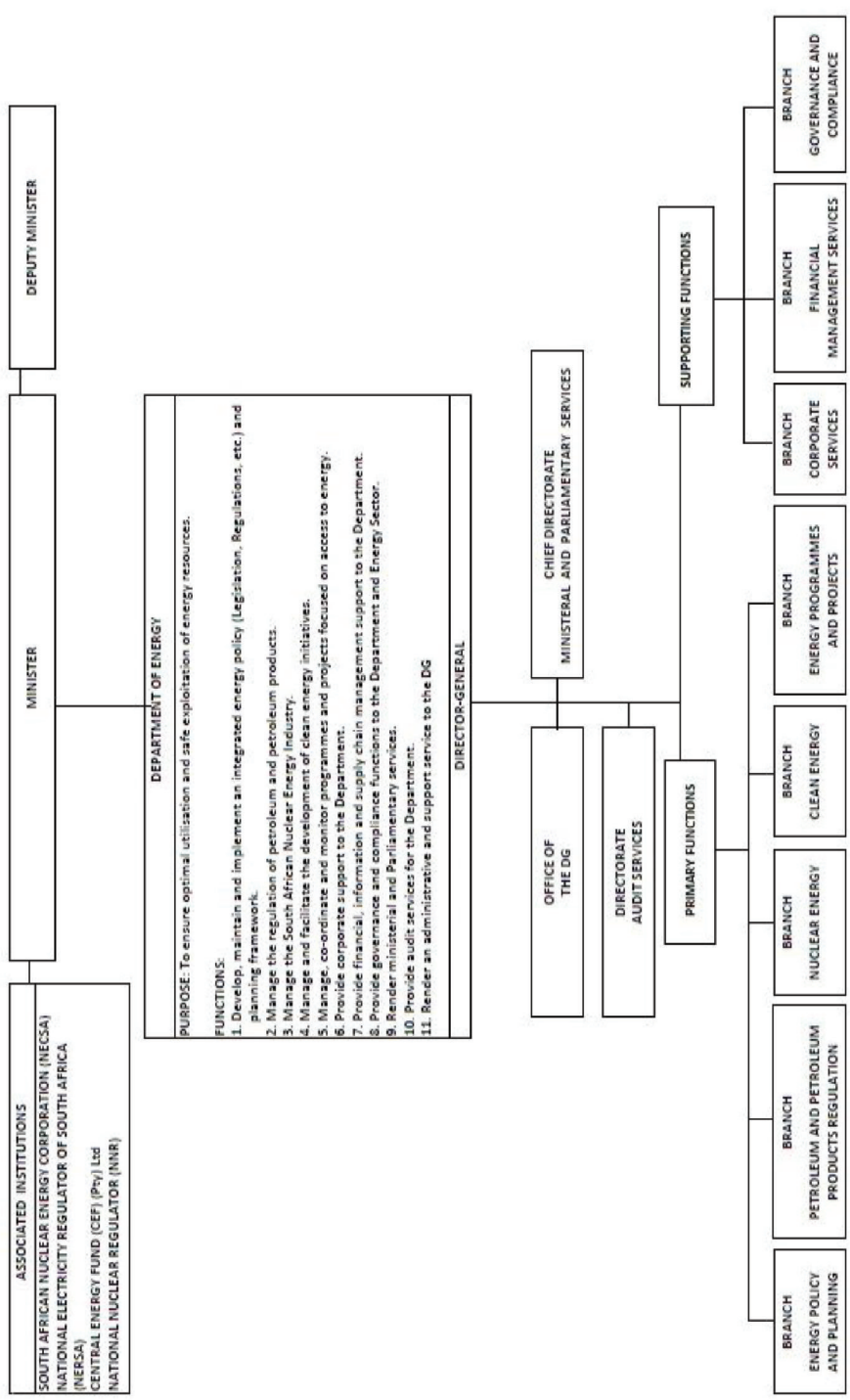
Company/ Entity	Mandate	Mission	Vision	Values
	<p>for the Republic and the International Conventions.</p> <p>Objectives of the Mandate:</p> <ol style="list-style-type: none"> <li>1. Provide for the protection of persons, property and the environment against nuclear damage through the establishment of safety standards and regulatory practices;</li> <li>2. Exercise regulatory control related to safety over the setting, design, construction, operation, manufacture of component parts, and decontamination;</li> <li>3. Decommissioning and closure of nuclear installations;</li> <li>4. Exercise regulatory control through the granting of nuclear authorisations;</li> <li>5. Provide assurance of compliance with the conditions of nuclear authorisations by implementing a system of compliance inspections;</li> <li>6. Fulfil national obligations in relation to international legal instruments governing nuclear safety;</li> <li>7. Ensure that provisions for nuclear emergency planning are in place.</li> </ol>			<p>people in all that they do.</p> <ul style="list-style-type: none"> <li>• Team work: Demonstrate a team working approach across the NNR.</li> <li>• Openness and transparency: Demonstrate accessibility through openness and transparency in interactions with all stakeholders.</li> </ul>
<b>PetroSA</b>	PetroSA, as South Africa's National Oil Company, is	PetroSA will be the leading provider of hydrocarbons and	To be the Leading African Energy Company.	<ul style="list-style-type: none"> <li>• Stewardship</li> <li>• Honesty</li> </ul>



Company/ Entity	Mandate	Mission	Vision	Values
	<p>mandated to operate as a commercial entity and create value for its shareholders and all its stakeholders. Its mandate extends beyond contributing to the national economy through tax and dividend payments, and includes making a significant contribution towards advancing the broader national objectives of the South African Government such as economic growth, job creation and industry transformation for the ultimate benefit of all the country's citizens.</p>	<p>related quality products by leveraging its proven technologies and harnessing its human capital for the benefit of its stake holders.</p>		<ul style="list-style-type: none"> <li>Integrity</li> <li>Respect</li> <li>Transparency</li> </ul>
<b>SANEDI</b>	<p>To direct, monitor &amp; conduct applied energy research &amp; development, demonstration &amp; deployment as well as undertake specific measures to promote Energy Efficiency (EE) throughout the economy. To establish a nationally focused energy research, development &amp; innovation sector &amp; undertake EE measures with a strong relevance for South Africa, aligned with the DoE objectives as stated in the National Energy Act, 2008.</p> <p>Objectives of the Mandate:</p> <ol style="list-style-type: none"> <li>1. Enable well-informed and high confidence energy planning, decision-making and support policy development;</li> <li>2. Accelerated transformation to less energy and carbon intensity;</li> </ol>	<p>Advance innovation of clean energy solutions and rational energy use that effectively supports South Africa's national energy objectives and the transition towards a sustainable low carbon energy future.</p>	<p>To serve as a catalyst for sustainable energy innovation, transformation and technology diffusion in support of sustainable development that benefits our nation.</p>	<ul style="list-style-type: none"> <li>Professionalism: The NNR holds themselves accountable to the highest standards of professionalism in everything they do.</li> <li>Integrity: Demonstration of integrity and ethical conduct in all they do.</li> <li>Excellence: striving for excellence in all that they do.</li> <li>Valuing People: They demonstrate that the value people in all that they do.</li> <li>Team work: Demonstrate a team working approach across the NNR.</li> <li>Openness and transparency: Demonstrate accessibility through openness and transparency in interactions with all stakeholders.</li> </ul>

Company/ Entity	Mandate	Mission	Vision	Values
	3. Foster a culture of energy efficiency and more rational energy use.			

ANNEXURE B: DOE ORGANOGRAMMES



## ANNEXURE C: BRANCHES OF THE DOE

Table 15 branches of the doe

Branch	Chief Directorate	Directorate	Sub- Directorate
<p><b>1. Energy Policy and Planning</b>  <b>Purpose: To develop, maintain and implement an integrated energy policy (legislation, regulations, etc.) and planning framework.</b></p>	<ul style="list-style-type: none"> <li><b>Policy Analysis and Research</b>            Conduct research and analysis of energy policies in relation to the impact of the demand and supply of energy as well as national and international trends and development.</li> </ul>	<ul style="list-style-type: none"> <li><b>Energy Data Collection, Analysis and Management</b>            To manage the overall collection, collation, validation, integrity and quality of energy data and dissemination of information/data thereof.</li> </ul>	<ul style="list-style-type: none"> <li><b>Energy Data Analysis and Dissemination</b>            To manage the analysis and dissemination of information and data.</li> <li><b>Energy Data Collection and Management</b>            To manage the collection, collation, validation integrity and quality of energy data.</li> </ul>
		<ul style="list-style-type: none"> <li><b>Energy Modelling</b>            To support evidence-based</li> </ul>	

Branch	Chief Directorate	Directorate	Sub- Directorate
		development of policies and plans.	
		<ul style="list-style-type: none"> <li> <b>Energy Planning and Strategic Interventions</b>                      To manage the development of energy plans and strategic interventions for generation/refining, distribution and transformation of energy sources for demand/supply optimisation.                 </li> </ul>	
	<ul style="list-style-type: none"> <li> <b>Hydrocarbons Policy</b>                      To oversee the development and review of hydrocarbons policy.                 </li> </ul>	<ul style="list-style-type: none"> <li> <b>Coal Policy</b>                      To direct policy and regulations development for coal.                 </li> <li> <b>Gas Policy</b>                      To direct policy and regulations development for gas.                 </li> <li> <b>Petroleum Policy</b>                      To direct policy and regulations development on petroleum products.                 </li> </ul>	

Chief Directorate		Directorate		Sub- Directorate	
Branch					
	<ul style="list-style-type: none"> <li><b>Electricity, Energy Efficiency and Environmental Policy</b> To oversee the development and review of electricity energy efficient and department environment policy and regulatory framework.</li> </ul>	<ul style="list-style-type: none"> <li><b>Electricity Policy</b> To direct policy development on electricity.</li> <li><b>Energy Efficiency and environmental policy</b> To direct policy development on energy efficiency and departmental environment policy.</li> <li><b>Electricity and Energy Efficiency Regulation</b> To develop and review electricity and energy efficiency regulatory framework.</li> </ul>			
2. Petroleum and Petroleum Products Regulation To manage the regulation of petroleum and petroleum products.	<ul style="list-style-type: none"> <li><b>Petroleum Licensing and Fuel Supply</b> To manage the petroleum licensing process and ensure the security of fuel supply in the country.</li> </ul>	<ul style="list-style-type: none"> <li><b>Petroleum licensing</b> To regulate the processing of petroleum and license for retailer/wholesale/manufacturing.</li> <li><b>License Analysis</b> To regulate the processing of petroleum licenses for wholesale/manufacturing /retailer and site.</li> <li><b>License Administration Support</b> Render specialised administration support services and administer business process systems and</li> </ul>			

Branch	Chief Directorate	Directorate	Sub- Directorate
		<p data-bbox="341 1151 1228 1187">control.</p> <ul style="list-style-type: none"> <li data-bbox="341 1187 1228 1344"> <p><b>Fuel Supply</b> To ensure the security and stability of fuel supply.</p> </li> <li data-bbox="341 1344 1228 1500"> <p><b>Commercial and Compliance</b> To monitor commercial and conduct economic analysis in line with legislation, regulations and the charter.</p> </li> <li data-bbox="341 1500 1228 1657"> <p><b>Petroleum legal Compliance and Enforcement</b> To provide legal support/advice on compliance monitoring with legislations and regulations and also conduct enforcement activities.</p> </li> </ul>	<ul style="list-style-type: none"> <li data-bbox="341 1568 1228 1724"> <p><b>Petroleum Compliance, Monitoring and Enforcement</b> To ensure technical, economic and legal compliance, monitoring and enforcement thereof with relevant legislation, specifications, standards as well as license and permit conditions.</p> </li> <li data-bbox="341 1724 1228 1872"> <p><b>Fuel Pricing</b> To regulate the pricing of petroleum products in accordance with the</p> </li> </ul>
		<ul style="list-style-type: none"> <li data-bbox="341 1151 1228 1299"> <p><b>Petroleum Inspectorate</b> To monitor compliance with legislation and regulations and also conduct fuel sample testing.</p> </li> </ul>	
		<ul style="list-style-type: none"> <li data-bbox="341 1151 1228 1299"> <p><b>Fuel Levies and Margins</b> To determine, review, update and maintain fuel levies and margins and</p> </li> </ul>	

Branch	Chief Directorate	Directorate	Sub- Directorate
<p>3. Nuclear Energy</p> <p>To manage the South African Nuclear Energy Industry.</p>	<p>legislative framework.</p>	<p>process the payment of fuel levies.</p> <ul style="list-style-type: none"> <li> <p><b>Fuel Pricing Mechanism</b></p> <p>To develop, evaluate and/or monitor pricing models, update elements of BFP and secure audit services for the auditing of fuel prices.</p> </li> </ul>	<ul style="list-style-type: none"> <li> <p><b>Nuclear Safety</b></p> <p>To manage all matters related to nuclear safety.</p> </li> <li> <p><b>Nuclear Liabilities Management</b></p> <p>To ensure the administration of South African obligations on matters pertaining to governance of nuclear liabilities and radiological environmental protection management.</p> </li> <li> <p><b>Nuclear Emergency Management</b></p> <p>To ensure the administration of South African obligations on matters pertaining to governance of nuclear emergency management.</p> </li> </ul>
<ul style="list-style-type: none"> <li> <p><b>Nuclear Safety and Technology</b></p> <p>To manage and implement all matters related to nuclear safety and technology as required by legislation and international agreements.</p> </li> </ul>	<ul style="list-style-type: none"> <li> <p><b>Nuclear Safety, Liabilities and Emergency Management</b></p> <p>To administer all matters related to nuclear safety, liabilities and emergency management as required by legislation and international agreements.</p> </li> </ul>		



Branch	Chief Directorate	Directorate	Sub- Directorate
	<ul style="list-style-type: none"> <li><b>Nuclear Technology</b> To manage and implement all matters related to nuclear technology and related programmes.</li> </ul>	<ul style="list-style-type: none"> <li><b>Nuclear Power Reactors</b> To oversee the operations of new and existing nuclear power reactors in South Africa.</li> <li><b>Nuclear Fuel Cycle</b> To ensure the development, implementation and monitoring of nuclear fuel cycle programmes in South Africa.</li> <li><b>Nuclear Technology Development</b> To undertake research on nuclear technologies and provide advice thereon.</li> </ul>	
	<ul style="list-style-type: none"> <li><b>Nuclear Non-proliferation and Radiation Security</b> To manage and implement all matters related to nuclear non-proliferation and radiation security as required by legislation and international agreements.</li> </ul>	<ul style="list-style-type: none"> <li><b>Nuclear Non-Proliferation</b> To administer all matters related to nuclear non-proliferation.</li> </ul>	<ul style="list-style-type: none"> <li><b>Nuclear Authorisations</b> To manage authorisations of nuclear materials, equipment and related technologies.</li> <li><b>Nuclear Non-Proliferation Obligations</b> To ensure compliance with all existing and new national and international nuclear non-proliferation obligations</li> </ul>

Branch	Chief Directorate	Directorate	Sub- Directorate
			and agreements and any matters related thereto.
			<ul style="list-style-type: none"> <li><b>Nuclear Enforcement and Compliance</b></li> </ul> <p>To ensure technical compliance with relevant legislation, specifications and standards on nuclear facilities, materials and related technologies.</p>
		<ul style="list-style-type: none"> <li><b>Nuclear and Radiation Security</b></li> </ul> <p>To administer all matters related to nuclear and radiation security as required by international agreements and governance of the nuclear sector in South Africa.</p>	
	<ul style="list-style-type: none"> <li><b>Nuclear Policy</b></li> </ul> <p>To develop and review policies as required by international agreements and governance of nuclear sector in South Africa.</p>	<ul style="list-style-type: none"> <li><b>Nuclear Safety and Technology Policy</b></li> </ul> <p>To undertake research, develop, review and monitor nuclear safety and technology, policies and advice thereon.</p> <ul style="list-style-type: none"> <li><b>Nuclear Non-Proliferation and Radiation Security Policy</b></li> </ul>	

Branch	Chief Directorate	Directorate	Sub- Directorate
		<p>To undertake research, develop, review and monitor nuclear non-proliferation and security policies and advice thereon.</p>	
<p><b>4. Clean Energy</b> To manage and facilitate the development of clean energy initiatives.</p>	<ul style="list-style-type: none"> <li><b>Energy Efficiency</b> To advance clean energy efficiency in South Africa.</li> </ul>	<ul style="list-style-type: none"> <li><b>Energy Efficiency Initiatives</b> To plan and coordinate initiatives and interventions focused on the development/improvement of the energy efficiency market.</li> <li><b>Energy Efficiency Co-ordination/Interface</b> To ensure integration and coordination of energy efficiency initiatives with relevant associated institutions.</li> </ul>	

Branch	Chief Directorate	Directorate	Sub- Directorate
	<ul style="list-style-type: none"> <li>• <b>Renewable Energy</b> To ensure the integration of renewable energy into the mainstream energy supply of South Africa.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Renewable Energy Initiatives</b> To plan and coordinate initiatives and interventions focused on the development/improvement of the renewable energy market.</li> <li>• <b>Renewable Energy Coordination/Interface</b> To ensure the integration and coordination of renewable energy initiatives with relevant associated institution.</li> </ul>	
	<ul style="list-style-type: none"> <li>• <b>Climate Change and Designated National Authority</b> To handle and manage climate change and designated national authority (CDM) within the energy sector.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Climate Change and Environmental Compliance</b> To ensure that climate change and environment response measures (mitigation and adaptation) are implemented within the energy sector.</li> <li>• <b>Designated National Authority (CDM)</b> To fulfil international energy commitments and obligations under the United Nations Framework Convention on Climate Change pertaining to the Kyoto Protocol.</li> </ul>	

Branch	Chief Directorate	Directorate	Sub- Directorate
<p>5. Energy Programmes and Projects To manage, coordinate and monitor programmes and projects focused on access to energy.</p>	<ul style="list-style-type: none"> <li><b>INEP</b> To oversee the Integrated National Electrification Programmes (INEP) for the Department.</li> </ul>	<ul style="list-style-type: none"> <li><b>Capital Programme</b> To manage finance and implementation process for Integrated National Electrification Programme (INEP).</li> <li><b>Planning</b> To manage the planning process of the Integrated National Electrification Programmes (INEP).</li> </ul>	
	<ul style="list-style-type: none"> <li><b>Programmes and Projects Management Office</b> To provide specialised assistance to the programme/project managers and management in general to apply project management principles, coordinate project information and report on projects.</li> </ul>		
	<ul style="list-style-type: none"> <li><b>Electricity Infrastructure/ Industry Transformation</b> To oversee programmes and projects focused on the development/improvement/transformation of the electricity generation, transmission and distribution sector</li> </ul>	<ul style="list-style-type: none"> <li><b>Community Programmes and Projects</b> To ensure mainstreaming of Government's priorities (i.e. Women, disabled, youth, children, HIV/AIDS etc.) for broad transformation into the work of the Department and of the</li> </ul>	<ul style="list-style-type: none"> <li><b>IPP Administration (Help Desk)</b> To render an administration and help desk support service to the IPP sector.</li> </ul>

Branch	Chief Directorate	Directorate	Sub- Directorate
	and Independent Power Producers (IPP).	Energy sector as well as to support Departmental special programmes/projects. <ul style="list-style-type: none"> <li>• <b>Energy Programmes and Projects</b></li> </ul> To plan, coordinate, monitor, administer and report on programmes and projects focused on the development/improvement/transformation and distribution industry and infrastructure. <ul style="list-style-type: none"> <li>• <b>IPP Strategic and Technical Planning</b></li> </ul> To ensure the development of a regulatory framework for the IPP programme. <ul style="list-style-type: none"> <li>• <b>IPP Programme Implementation and Monitoring</b></li> </ul> To manage the process of assessing IPP proposals and ensure compliance of contracted IPP's.	
6. Governance and Compliance To ensure that functions rendered are monitored,	<ul style="list-style-type: none"> <li>• <b>Monitoring Evaluation and SoE Oversight</b></li> </ul> To monitor the Departments performance and compliance of	<ul style="list-style-type: none"> <li>• <b>State Owned Enterprise oversight</b></li> </ul> To monitor compliance of the Departments public entities with regard to legislation, finance and	

Branch	Chief Directorate	Directorate	Sub- Directorate
<p><b>evaluated and comply with applicable controls to eliminate risks.</b></p>	<p>SOEs.</p>	<p>administrative requirements.</p> <ul style="list-style-type: none"> <li> <b>Monitoring and Evaluation</b>                      To monitor the Department's performance and evaluate the Departments impact on operations within and outside the Department.                 </li> </ul>	
	<ul style="list-style-type: none"> <li> <b>Strategy and Risk Management</b>                      To ensure the implementation of risk management strategies and compliance with the strategic plan.                 </li> <li> <b>International Coordination</b>                      To handle and co-ordinate international liaison in the field of energy.                 </li> </ul>		

## ANNEXURE D: LIST OF FUNCTIONS OF THE DEPARTMENT AND ITS SOCS/SOES

Table 16 List of functions of the department and its SoCs/SoEs

List of Functions	Objective of the Function	Relation to Management of the Environment
<b>DEPARTMENT OF ENERGY</b>		
<b>Energy Planning and Policy</b>		
To improve energy security by regulating the demand and introducing a diversified mix of energy generation technologies.	Demand management.	Non-core.
Improving efficiency through competition in the Energy Sector.	Competition, to improve energy security.	Non-core.
To improve energy security by developing key indicators to effectively monitor the Energy Sector policies on an on-going basis.	Energy policy.	Non-core.
To improve energy security by planning interventions to expand energy infrastructure by developing a policy framework for the Integrated Energy Plan, the Integrated Resource Plan, the Liquid fuels infrastructure roadmap, the transmission development plan and the Major distribution infrastructure plan over the medium term.	Energy planning.	Core. The planning for and implementation of new infrastructure has a direct impact on the environment.
To improve energy security by publishing an annual energy statistics report to facilitate information-based decision making.	Energy Publications.	Non-core.
To address current and envisaged energy supply and distribution constraints by developing the Approach to Distribution Asset Management (ADAM) Plan for the rehabilitation of critical municipal electricity distribution infrastructure.	Distribution Asset Management Plan.	Non-core.
Direct policy development on energy efficiency and departmental environment policy.		Core.
Evaluate implications of policies and protocols on the energy efficiency and environmental sector.		Core.
Monitor the impact of energy efficiency and environmental policies.		Core.
<b>Petroleum and Petroleum Products Regulation</b>		
To ensure development and transformation of the liquid fuel industry and security of supply of petroleum products in the South African economy through monitoring and enforcing technical and economic compliance to legislation, specifications, standards and licence conditions in each year of the medium term.	Compliance and Monitoring Enforcement.	Core. The control of fuel specifications in respect of quality of fuels and incorporate of alternative, more sustainable fuel sources.
Facilitate the of participation of the Historically Disadvantaged Individuals(HDIs) in the petroleum sector by enforcing compliance by	Petroleum Licensing.	Non-core.



List of Functions	Objective of the Function	Relation to Management of the Environment
wholesalers, manufacturers and retailers with the liquid fuels charter in the adjudication of licences on an ongoing basis.		
Strengthen the regulatory framework in the liquid fuels petroleum industry by implementing the Regulatory Accounting System (RAS) to have a transparent fuel pricing mechanism that will reward investors in the liquid fuels sector through the value chain, by 203/2014.	Fuel Price Regulation.	Non-core.
<b>Electrification and Energy Programme and Project Management</b>		
Increase access to electricity by implementing and monitoring the Integrated National Electrification Programme (INEP), which aims to electrify an additional 890000 (grid and non-grid) households by 2016/2017.	Electrification.	Non-core.
Ensure the efficient management of electricity supply by (1) enhancing the application of project management business principles to assist programme and project managers on an ongoing basis and (2) continually co-ordinate, monitor and report on the implementation of programmes and projects focused on the development, improvement and transformation of energy generation, refinement and transmission, and on the distribution industry and infrastructure.	Electricity Supply.	Core. The planning for and implementation of new infrastructure has a direct impact on the environment.
Increase public awareness about energy issues while empowering disadvantaged and vulnerable groups by identifying, implementing, managing and co-ordinating upliftment programmes and projects on an ongoing basis.	Environmental Awareness and Community Upliftment.	Core. Informing and educating the public on responsible energy usage will have a direct impact on the environmental footprint of the energy sector.
Develop and review electricity and energy efficiency regulatory framework.		Core. Energy efficiency is critical to reducing the direct impacts of the energy sector on the environment.
Develop and review policies in the electricity sector (i.e. Renewables, electrification etc.).		Core. The development of policy certainty in respect of energy efficiency, alternative cleaner energy sources, and responsible energy usage will be critical to managing the functions of the department that relate to the environment.
Responsible for policy making and legislative requirements	Policy and Legislation	Non-Core
<b>Nuclear Energy</b>		
Regulate the security of nuclear material, related equipment and facilities by developing, publishing, implementing and reviewing the statutory nuclear framework on an ongoing basis.	Nuclear Security.	Core. Nuclear installations have inherent environmental risk that needs to be controlled and

List of Functions	Objective of the Function	Relation to Management of the Environment
Strengthen the control of, and accounting for, nuclear materials and related equipment by enforcing relevant regulations and statutory frameworks on an ongoing basis.	Nuclear Control and Accounting.	managed. Non-core.
Ensure safe, secure and sustainable management and disposal of radioactive waste by facilitating the full operation of the National Radioactive Waste Disposal Institute (NRWDI), and establishing a waste disposal fund by 2015.	Radioactive waste management.	Core. Waste disposal has a direct impact on the environment.
Contribute towards ensuring the security of energy supply by leading, developing and overseeing the implementation of the nuclear energy expansion programme as guided by the Nuclear Energy Policy and the decision of the National Nuclear Energy Executive Co-ordination Committee (NNEECC) of October 2013, in accordance with timelines stipulated in the IRP 2010-2030.	Energy Security.	Non-core.
Comply with international nuclear obligations by developing, maintaining and implementing an appropriate statutory framework for Nuclear Policy by 2016.	Nuclear Compliance.	Non-core.
Ensure the readiness of all relevant stakeholders for the management of any nuclear emergency as part of the national disaster plan on an ongoing basis by (1) Conducting an emergency preparedness review with the International Atomic Energy Agency in order to identify gaps in South Africa's nuclear infrastructure by 2014 and (2) Developing an action plan to address such gaps to bring it in line with the National Nuclear Emergency Management plan by 2015.	Nuclear Management.	Core. A nuclear emergency, including potential pollution, is likely to have direct impact on the environment.
Ensure the administration of South African obligations on matters pertaining to governance of nuclear liabilities and radiological environmental protection management.	Nuclear Management.	Core. Management of radiological risks to the environment is critical to ensure the protection of the environment.
<b>Clean Energy</b>		
Manage climate change and environmental matter by (1) developing and implementing Climate Change Policies, (2) developing the green economy and mitigating the risk of adverse environmental impact on an ongoing basis and (3) publishing climate change strategies and plans by 2014/2015.	Respond to Climate Change.	Core. This function will aim to achieve the commitments made by government in relation to climate change.
Promote and facilitate EEDSM by (1) Planning and developing interventions to increase energy savings on an ongoing basis, (2) develop policies to increase the impact of EEDSM Strategies by 2015 and (3) to develop incentive schemes like the energy efficiency tax incentive by 2014/2015.	Energy Efficiency and Demand Side Management.	Core. Responsible and efficient use of energy will assist in reducing the environmental footprint associated with the energy sector.
Improve Demand Side Management by facilitating the development of an	Energy Management Plan.	Core. More efficient demand side

List of Functions	Objective of the Function	Relation to Management of the Environment
Energy Management Plan by 2014/2015.		management will result in more efficient energy usage and consequently will reduce the associated environmental footprint.
Ensure the integration of renewable energy into the mainstream energy supply of South Africa by planning and co-ordinating initiatives and interventions focused on the development and improvement of the renewable market through (1) facilitating the incorporation of the Renewable Energy Policy I the IEP by 2014 and (2) Implementing awareness campaigns from 2013/2014 onwards.	Integration of Renewable Energy.	Core. Integration of cleaner energy alternatives into the national supply will reduce the environmental footprint associated with the energy sector.
Ensure the integration of renewable energy into the mainstream energy supply of South Africa.		
Provide technical input with regard to renewable energy regulations, policies and strategies.		
Ensure that climate change and environment response measures (mitigation and adaptation) are implemented within the energy sector.		
Fulfill international energy commitments and obligations under the United Nations Framework Convention on Climate Change pertaining to the Kyoto Protocol		
Ensuring the provision of clean energy and renewable energy	Clean and Renewable energy	Core
Ensure the provision of energy for socio-economic development	Energy Provision	Core
<b>STATE OWNED COMPANIES AND ENTITIES</b>		
<b>NATIONAL ENERGY REGULATOR OF SOUTH AFRICA</b>		
Facilitate contribution towards greenhouse gas emissions targets through multi-year price determination factors.	Respond to Climate Change.	Core. Climate change is a core environmental issue.
Implementation and determination of carbon tax and environmental levies.	Respond to Climate Change.	Core.
Assist in educating the public regarding environmental issues and decisions undertaken by NERSA.	Environmental Awareness.	Core.
Monitoring and implementation of the IRP.	Monitoring and Implementation of Policies, Plans and Programmes.	Non-core.
<b>SOUTH AFRICAN NUCLEAR ENERGY CORPORATION</b>		
To implement Pelichem's strategy for growth and sustainability.	Monitoring and Sustainable Development.	Non-core.
Maintain and improve the NECSA Group safety culture, SHEQ processes and procedures, audit and reporting practices to ensure full compliance with all regulatory and best practice requirements.	Monitoring and Compliance.	Core. Compliance with relevant environmental standards and regulations is core to reducing the impact that NECSA has on the environment.

List of Functions	Objective of the Function	Relation to Management of the Environment
To undertake and promote research and development in the field of nuclear energy and radiation sciences and technology and, subject to the Safeguards Agreement, to make these generally available.	Research and Development.	Non-core.
<b>CENTRAL ENERGY FUND</b>		
Deliver sustainable development of the economy and communities through the targeting of skills development, the implementation of competitive supplier development programmes and the investment in social upliftment programmes of targeted groups through Corporate Social Investment programmes.	Sustainable Development.	Non-core.
Mitigate against environmental impacts and maximise sustainable development.	Environmental Impact Mitigation	Core.
Invest in and develop renewable and alternative energy resources and in energy efficiency.	Renewable energy investment and energy efficiency.	Core. Integration of cleaner energy alternatives into the national supply will reduce the environmental footprint associated with the energy sector.
<b>PETROSA</b>		
Develop, implement and monitor compliance to the Environmental Strategy and policies.	Monitoring and Implementation of Policies, Plans and Programmes	Core.
Develop programmes and procedures to ensure the environmental impact of operations is managed.	Develop plans, programmes and policies.	Core. Compliance with relevant environmental standards and regulations is core to reducing the impact that PetroSA has on the environment.
Monitor compliance to legislation and internal policies and procedures.	Monitor compliance.	Core.
Liaise with relevant stakeholders on environmental performance and impacts.	Monitor Compliance and Corporate governance.	Core.
<b>SOUTH AFRICAN NATIONAL ENERGY DEVELOPMENT INSTITUTE</b>		
Responsible for building capacity on Carbon Capture Storage (CCS) and implementing Carbon Capture Storage.	Carbon Capture Storage.	Core. CCS is a potential means of mitigating the contribution of fossil fuel emissions to global warming and ocean acidification.
Direct, monitor or conduct applied research and development as well as take measures to promote energy efficiency throughout the economy.	Research and Development.	Core. Responsible and efficient use of energy will assist in reducing the environmental footprint associated with the energy sector.
Ensure that energy resources are used in an optimal manner.	Energy Efficiency.	Core. Responsible and efficient use of energy will assist in reducing the

List of Functions	Objective of the Function	Relation to Management of the Environment
		environmental footprint associated with the energy sector.
Promote energy and research and technology innovation.	Research and Development.	Non-core.
Attract investors to the energy field.	Promote the Energy Sector.	Non-core.
Facilitate and manage the efficient management of energy demand and its conservation.	Energy Efficiency and Demand Management.	Core. More efficient demand side management will result in more efficient energy usage and consequently will reduce the associated environmental footprint.
<b>NATIONAL NUCLEAR REGULATORY</b>		
Prepare and submit annual report on the health and safety of workers, the public and environment associated with all sites.	Environmental Monitoring.	Core. Monitoring and reporting on the environmental impacts associated with nuclear facilities.
Protection of the environment from the damage or potential damage of radioactive material through a process of authorisation and compliance assurance.	Environmental Monitoring.	Core.
Protection of biota from damage or potential of radioactive material through a process of authorization and compliance assurance.	Protection of Biota.	Core.
Verification of compliance of authorisation conditions pertaining to environmental protection through a sampling and analysis function.	Compliance.	Core.
Grant or amend nuclear authorisations.	Nuclear Authorisations.	Core. Nuclear facilities have a direct impact on the environment and as such need to be managed responsibly.
Advise the Minister on:	Advisor to the Minister.	Non-core.
a) Conditions that may cause nuclear damage;		
b) Items the Minister has referred to NNR; and		
c) What the NNR thinks necessary.		

**ANNEXURE E: SELECT NEMA LISTED ACTIVITIES**  
**TABLE 17: SELECT NEMA LISTED ACTIVITIES**

Regulation Notice and activity #	Listed activity
<b>GNR 544, Activity 1</b>	The construction of facilities or infrastructure for the generation of electricity where: (i) the electricity output is more than 10 megawatts but less than 20 megawatts; or (ii) the output is 10 megawatts or less but the total extent of the facility covers an area in excess of 1 hectare.
<b>GNR 544, Activity 2</b>	The construction of facilities or infrastructure for the storage of ore or coal that requires an atmospheric emissions license in terms of the National Environmental Management: Air Quality Act (Act No. 39 of 2004).
<b>GNR 544, Activity 10</b>	The construction of facilities or infrastructure for the transmission and distribution of electricity - (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or (ii) inside urban areas or industrial complexes with a capacity of 275 kilovolts or more.
<b>GNR 544, Activity 13</b>	The construction of facilities or infrastructure for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 but not exceeding 500 cubic metres;
<b>GNR 544, Activity 27</b>	The decommissioning of existing facilities or infrastructure, for - (i) electricity generation with a threshold of more than 10MW; (ii) electricity transmission and distribution with a threshold of more than 132kV; (iii) nuclear reactors and storage of nuclear fuel; (iv) activities, where the facility or the land on which it is located is contaminated ; (v) storage, or storage and handling, of dangerous goods of more than 80 cubic metres; but excluding any facilities or infrastructure that commenced under an environmental authorisation issued in terms of the Environmental Impact Assessment Regulations, 2006 made under section 24(5) of the Act and published in Government Notice No. R. 385 of 2006, or Notice No. 543 of 2010.
<b>GNR 544, Activity 28</b>	The expansion of or changes to existing facilities for any process or activity where such expansion or changes to will result in the need for a [new, or amendment of, an existing] permit or license in terms of national or provincial legislation governing the release of emissions or pollution, excluding where the facility, process or activity is included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case that Act will apply.
<b>GNR 544, Activity 29</b>	The expansion of facilities for the generation of electricity where: (i) the electricity output will be increased by 10 megawatts or more, excluding where such expansion takes place on the original

Regulation Notice and activity #	Listed activity
	development footprint; or (ii) regardless the increased output of the facility, the development footprint will be expanded by 1 hectare or more;
<b>GNR 544, Activity 38</b>	The expansion of facilities for the transmission and distribution of electricity where the expanded capacity will exceed 275 kilovolts and the development footprint will increase.
<b>GNR 544, Activity 42</b>	The expansion of facilities for the storage, or storage and handling, of a dangerous good, where the capacity of such storage facility will be expanded by 80 cubic metres or more.
<b>GNR 544, Activity 48</b>	The expansion of facilities for the refining, extraction or processing of gas, oil or petroleum products where the installed capacity of the facility will be increased by 50 cubic metres or more per day, excluding facilities for the refining, extraction or processing of gas from landfill sites.
<b>GNR 544, Activity 49</b>	The expansion of facilities or infrastructure for the bulk transportation of dangerous goods: (i) in gas form, outside an industrial complex, by an increased throughput capacity of 700 tons or more per day; (ii) in liquid form, outside an industrial complex or zone, by an increased throughput capacity of 50 cubic metres or more per day; or (iii) in solid form, outside an industrial complex or zone, by an increased throughput capacity of 50 tons or more per day.
<b>GNR 545, Activity 1</b>	The construction of facilities or infrastructure for the generation of electricity where the electricity output is 20 megawatts or more.
<b>GNR 545, Activity 2</b>	The construction of facilities or infrastructure for nuclear reaction including energy generation, the production, enrichment, processing, reprocessing, storage or disposal of nuclear fuels, radioactive products and nuclear and radioactive waste.
<b>GNR 545, Activity 3</b>	The construction of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of more than 500 cubic metres.
<b>GNR 545, Activity 4</b>	The construction of facilities or infrastructure for the refining, extraction or processing of gas, oil or petroleum products with an installed capacity of 50 cubic metres or more per day, excluding facilities for the refining, extraction or processing of gas from landfill sites.
<b>GNR 545, Activity 5</b>	The construction of facilities or infrastructure for any process or activity which requires a permit or license in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent and which is not identified in Notice No. 544 of 2010 or included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case that Act will apply.
<b>GNR 545, Activity 6</b>	The construction of facilities or infrastructure for the bulk transportation of dangerous goods - (i) in gas form, outside an industrial complex, using pipelines, exceeding 1000 metres in length, with a throughput capacity of more than 700 tons per day; (ii) in liquid form, outside an industrial complex, using pipelines, exceeding 1000 metres in length, with a throughput capacity more

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Regulation Notice and activity #	Listed activity
	<p>than 50 cubic metres per day; or</p> <p>(iii) in solid form, outside an industrial complex, using funiculars or conveyors with a throughput capacity of more than 50 tons day.</p>
<b>GNR 545, Activity 8</b>	The construction of facilities or infrastructure for the transmission and distribution of electricity with a capacity of 275 kilovolts or more, outside an urban area or industrial complex.
<b>GNR 545, Activity 25</b>	The expansion of facilities for nuclear reaction including energy generation, the production, enrichment, processing, reprocessing, storage or disposal of nuclear fuels, radioactive products and nuclear and radioactive waste.
<b>GNR 545, Activity 26</b>	Commencing of an activity, which requires an atmospheric emission license in terms of section 21 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004), except where such commencement requires basic assessment in terms of Notice of No. R544 of 2010.

## ANNEXURE F: INTERNATIONAL CONVENTIONS AND TREATIES

Table 18: International Conventions and Treaties (Department of Minerals and Energy, 2008).

Name of Convention	Date of Signature/ Ratification/ Accession	Overall Objectives
<b>Rio Declaration and Principles, Agenda 21</b>	Administration by DEAT	The main objective of this declaration and agreement is to promote sustainable development.
<b>UN Convention on Biological Diversity</b>	The convention was signed by South Africa in June 1993 and ratified on November 1995	Conservation of biological diversity Sustainable use of its components; and Fair and equitable sharing of benefits arising from genetic resources.
<b>UN convention to combat desertification and drought</b>	The convention was signed on 9 January 1995, and ratified on 30 September 1997.	To combat desertification and mitigate the effects of drought in countries experiencing serious drought and/or desertification, particularly in Africa, through effective action at all levels, supported by international cooperation and partnership arrangements, in the framework of an integrated approach which is consistent with Agenda 21, with a view to contributing to the achievement of sustainable development in affected areas.
<b>Convention on international trade in endangered species of wild fauna and flora (CITES)</b>	South Africa ratified the convention in 1975	The protection of endangered species prominent in international trade through appropriate control measures and monitoring the status of such species.
<b>Convention on the conservation of migratory species of wild animals (Bonn convention)</b>	South Africa acceded to the convention in December 1991.	The convention was a response to the need for nations to cooperate in the conservation of animals that migrate across their borders. These include terrestrial mammals, reptiles, marine species and birds. Special attention is paid to endangered species.
<b>Convention on wetlands of international importance especially and water fowl Habitat</b>	South Africa ratified the convention in March	The broad aims of this convention are to stem the loss and to promote wise use of the wetlands. South Africa has designated 15 sites to the list of wetlands of international importance. The designation of other

Name of Convention	Date of Signature/ Ratification/ Accession	Overall Objectives
<b>(Ramsar Convention)</b>	1975.	sites is under consideration.
<b>Protocol for the protection of the Ozone Layer (Montreal Protocol)</b>	South Africa became a signatory to the protocol in January 1990.	The protocol is aimed at ensuring measures to protect the ozone layer.
<b>Convention on the transboundary movements of hazardous wastes and their disposal.</b>	Ratified in May 1994	Reduce transboundary movements of wastes subject to the convention to a minimum consistent with the environmentally sound and efficient management of such wastes. Minimize the amount and toxicity of wastes generated and ensure their environmentally sound management as closely as possible to the source of generation; and Assist least developed countries in environmentally sound management of the hazardous and other wastes they generate.
<b>UN framework convention on climate change</b>	Ratified in August 1997	The ultimate objective is to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous interference with the climate system.
<b>Kyoto protocol</b>	South Africa acceded to the protocol on 31 July 2002. The protocol entry into force in South Africa on 16 February.	The Kyoto protocol is an amendment to the United Nations Framework Convention on Climate Change (UNFCCC). Countries that ratify this protocol commit to reduce their emissions of carbon dioxide and five other greenhouse gasses, or engage in emissions trading if they maintain or increase emissions of these gases.
<b>Convention on Nuclear Safety</b>	Convention signed on 20 September 1994. Instrument of ratification deposited on 24 December 1996. Entered	To legally commit participating states operating land based nuclear power plants to maintain a high level of safety by setting international benchmarks to which states would subscribe.

Name of Convention	Date of Signature/ Ratification/ Accession	Overall Objectives
	into force 24 March 1997.	
<b>SADC protocol of energy 1996</b>	Ratified on 29 April 1999	<p>Harmonize national and regional energy policies, strategies and programmes on matters of common interest based on equity, balance and mutual benefit.</p> <p>Cooperate in the development of energy and energy pooling to ensure security and reliability of energy supply and the minimization of costs.</p> <p>Cooperate in the development and utilisation of energy in the region in the following sub-sectors: Wood, fuel, petroleum and natural gas, electricity, coal, new and renewable energy sources, energy efficiency and conservation, and other cross cutting themes of interest to member states.</p> <p>Ensure the provision of reliable, continued and sustainable energy services in the most efficient and cost effective manner.</p> <p>Promote joint development of human resources and organizational capacity building in energy.</p> <p>Cooperate in the research, development, adaptation, dissemination and transfer of low cost energy technologies.</p> <p>Achieve standardization in appropriate energy development and application including the use of common methods and other techniques.</p>
<b>Protocol on mining, 1997</b>	Ratified on 29 April 1999	<p>Seek to harmonize national and regional policies, strategies and programmes related to the development and exploitation of mineral resources.</p> <p>Cooperate in facilitating the development of human and technology capacity.</p> <p>Encourage the development, transfer and mastery of science and technology throughout the region.</p> <p>Encourage private sector participation in the exploitation of mineral resources.</p> <p>Promote economic empowerment of the historically disadvantaged groups in the mining sector.</p>

Name of Convention	Date of Signature/ Ratification/ Accession	Overall Objectives
<b>The convention on the Physical Protection of Nuclear Material</b>	Opened for signing in 1980 and entered into force in 1987. The convention is indefinite. South Africa signed the convention in 1981 and the convention was entered into force in 2007	Jointly develop and observe internationally accepted standards of health, mining safety and environmental protection.  With the purpose the facilitate international co-operation in the peace application of nuclear energy in terms of potential dangers from the unlawful dangers of taking or use of nuclear material and the need to adopt and ensure appropriate and effective measures to ensure the prevention, detection and punishment of offences relating to nuclear material and for the protection of nuclear material
<b>The Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.</b>	South Africa acceded to the Joint Convention in November 2006 and South Africa's obligations under the Joint Convention entered into force in February 2007.	The Joint Convention applies to spent fuel and radioactive waste resulting from civilian nuclear reactors and applications, and military or defence programmes, if and when such materials are transferred permanently to an managed exclusively within civilian programmes, or when declared as spent fuel or radioactive waste for the purpose of the Joint Convention by the Contracting Party. In addition, the Joint Convention applies to planned and controlled releases of liquid or gaseous radioactive materials from regulated nuclear facilities into the environment.  <ul style="list-style-type: none"> <li>• The obligation to establish and maintain a legislative and regulatory framework to govern safety of spent fuel and radioactive waste management and the obligation to ensure that individuals, society and the environment are adequately protected against radiological and other hazards, inter alia ,</li> <li>• Appropriate siting, design and construction of facilities and by making provisions for ensuring the safety of facilities both during their operation and after their closure.</li> </ul> Contracting Parties are also obliged to take appropriate steps to ensure that disused sealed sources are managed safely.

Name of Convention	Date of Signature/ Ratification/ Accession	Overall Objectives
<b>Treaty on the Proliferation of Nuclear Weapons</b>	Opened for signing in 1968 and entered into force in 1970. In 1995 the Treaty was extended indefinitely	The objective of the Treaty is to prevent the spread of nuclear weapons and weapons technology, to promote cooperation in the peaceful uses of nuclear energy and to further the goal of achieving nuclear disarmament and general and complete disarmament. The Treaty represents the only binding commitment in a multilateral treaty to the goal of disarmament by the nuclear-weapon States.
<b>African Nuclear Weapon-Free zone treaty (Pelindaba Treaty)</b>	The Treaty was in 1996 and entered into force in 2009. The Treaty is of a permanent nature and shall remain in force indefinitely.	The treaty ensures that a nuclear-weapon free zone will protect African states from a nuclear attack on their territories, to promote regional cooperation for the development and practical application of nuclear energy for peaceful purposes in the interest of sustainable social and economic development of the African continent and to keep Africa a place free of environmental pollution by radioactive wastes and other radioactive matter.

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