mineral resources
& energy

Department:
Mineral Resources and Energy
REPUBLIC OF SOUTH AFRICA

2030
NDP

CONTENTS

CONTENTS

List of Figures

Abbreviations

4IR	Fourth Industrial Revolution
AHTR	Advanced High-Temperature Reactor
AEMFC	African Exploration Mining and Finance Corporation
AFD	Agence Française de Développement
AIDC	Automotive Industry Development Centre
APP	Annual Performance Plan
B-BBEE	Broad-Based Black Economic Empowerment
BSTEP	Black Science, Technology and Engineering Professionals
BW	Bid Window
CGS	Council for GeoSciences
CEF	Central Energy Fund
DIIR	Disabling Incident Injury Rate
DoHE	Department of Higher Education and Training
DoL	Department of Labour
DST	Department of Science and Technology
DMRE	Department of Mineral Resources and Energy
ETDP SETA	Education, Training and Development Practices SETA
EPP	Electricity Pricing Policy
EAF	Energy Availability Factor
EDP	Enterprise development programme
EMP	Environmental Management Plan
EY	Ernst & Young
FNRBA	Forum for Nuclear Regulatory Bodies in Africa
GDP	Gross Domestic Product
GTP	Geoscience Technical Programme
HDIs	Historically Disadvantaged Individuals
HDSA	Historically Disadvantaged South Africans
IAEA	International Atomic Energy Agency
IDC	Industrial Development Corporation

Abbreviations

IDP	Integrated Development Plan
IDZ	Industrial Development Zone
IEA	International Energy Agency
IEP	Integrated Energy Plan
IMF	International Monetary Fund
INEP	Integrated National Electrification Programme
IPCC	International Panel on Climate Change
IRP	Integrated Resource Plan
MES	Minimum Emission Standards
MMP	Multidisciplinary geoscience mapping programme
MTSAO	Medium Term Strategic Adequacy Outlook
MHSI	Mine Health and Safety Inspectorate
MPRDA	Mineral and Petroleum Resources Development Act
MQA	Mining Qualifications Authority
MTSF	Medium Term Strategic Framework
MW	Megawatt
MYPD	Multi-Year Price Determination
NDP	National Development Plan
NEDLAC	National Economic Development and Labour Council
NERSA	National Energy Regulator of South Africa
NEMA	National Environmental Management Act
NICD	National Institute for Communicable Diseases
NMOG	National Macro Organisation of Government
NRWDI	National Radioactive Waste Disposal Institute
NDC	Nationally Determined Contribution
NNRA	Nigerian Nuclear Regulatory Authority
OHS	Occupational Health and Safety
PASA	Petroleum Agency of South Africa
PBMR	Pebble Bed Modular Reactor
PMI	Purchasing Managers' Index
PPI	Policy Perception Index
PWC	Price Waterhouse Coopers
RAS	Regulatory Accounting System
REEEP	Renewable Energy and Energy Efficiency Partnership
RRs	Research Reactors
S&P	Standard & Poor
SADC	Southern African Development Community
SARB	South African Reserve Bank
SARS	South African Revenue Service
SET	Science-Engineering-Technology
SFF	Strategic Fuel Fund
SMR	Small Modular Reactors
SMME	Small, medium, and micro enterprises
SOE	State Owned Enterprise
SSA	Sub Saharan Africa
PV	Solar photovoltaics
SADPMR	South African Diamond and Precious Metals Regulator
iGAS	South African Gas Development Company
SANEDI	South African National Energy Development Institute
NNR	South African Nuclear Regulator
SDT	State Diamond Trader
TIA	Technology Innovation Agency
TID	Technical indicator description
TWh	Terawatt-hours
WiE	Women in Energy
WSP	Workplace Skills Plan
WEF	World Economic Forum
WEC	World Energy Council

Executive Authority's Statement

The reconfiguration and merger of the Department of Mineral Resources and the Department of Energy into a new Department of Mineral Resources and Energy (DMRE), was pronounced by the President in June 2019 to better capacitate and respond to the strategic objectives espoused in the National Development Plan (NDP) with regard to the regulation and transformation of the mining and energy sectors.

There is no doubt that the minerals and energy industry complex is a catalyst for economic growth and development. Reliable supply of energy drives economic activity and growth and as such, it should meet industrial, commercial and household needs. Challenges faced in the sector require all stakeholders to collaborate and work together for the sector to continue being sustainable, competitive and ultimately to improve the lives of all South Africans.

To address energy shortages, the DMRE will initiate the procurement of emergency power, ease requirements and processes for self-generation and the issuing of Section 34 Determinations in line with the IRP2019 and enabling municipalities in good financial standing to buy their own power.

Nuclear Energy

The Nuclear Energy Policy of 2008 provides the government vision to become self-sufficient in all aspects of the nuclear value chain for peaceful use. Amongst the government policy objectives is the promotion of nuclear energy as an important electricity supply option through the establishment of a national industrial capability for the design, manufacture and construction of nuclear energy systems.

South Africa is the only country in Africa with nuclear energy through operating Koeberg Nuclear Power Station. The extension of life of Koeberg Power Station is critical for continued energy security in the period beyond 2024, when it reaches the end of its 40-year life. In accordance with IRP2019, the Koeberg Power Plant design life must be extended by another 20 years to ensure that the necessary technical and regulatory work can be completed. To this end, the DMRE will commence with preparations for a nuclear build programme towards an additional 2 500 MW at a scale and pace that the country can afford, to ensure security of energy supply.

The DMRE in conjunction with the Ministerial Task Team will further focus on the development of the implementation framework for the replacement of the SAFARI-1 Research Reactor with a new Multi-Purpose Reactor within the next ten years to ensure that South Africa remains at the forefront of nuclear research and development and maintains its global leadership in the production of radioisotopes.

Natural Gas

With the increasing availability of gas in Southern Africa, the DMRE generation using gas. There is enormous potential and opportunity through the Brulpadda gas resource discovery in the Outeniqua Basin of South Africa and piped natural gas from Mozambique (Rovuma Basin). Indigenous gas, like coal-bed methane and shale gas, form a central part of our strategy for regional economic integration within SADC.

Co-operation with neighbouring countries is being explored and partnerships are developed for joint exploitation and beneficiation of natural gas within the SADC region. The SADC Gas Master Plan will identify the short- and long-term infrastructure requirements to enable the uptake of a natural gas market.

South Africa continues to run diesel plants at Ankerlig (Saldanha Bay), Gourikwa (Mossel Bay), Avon (Outside Durban) and Dedisa (Coega IDZ), because of the unavailability of natural gas, which is cheaper than diesel. The gas to power nexus has not yet been exploited, to the extent that gas plants at Avon and Dedisa could be converted to combined cycle plants, provided that natural gas, either pipeline or LNG infrastructure, is developed.

Hydroelectricity

South Africa has entered a Treaty for the development of the Grand Inga Project in the Democratic Republic of Congo (DRC), with some of the power intended for transmission to South Africa across DRC, Zambia, Zimbabwe and Botswana. The regional development drivers are compelling, since currently there is very little energy trade between these countries, due to the lack of infrastructure. The potential for intra-SADC trade is huge as it could open economic trade.

The DMRE will ensure that the country has a secured supply of energy that is cost effective and meets all demands. The high costs and unreliable supply of energy has had a negative impact on mining and many other industries. In this regard, we believe that lowering the cost of energy should be a major area of focus to enable the growth of the extractive sector like ours and other sectors in South Africa's economy.

Petroleum Products

South Africa remains a net importer of refined petroleum products like petrol and diesel, and petrochemicals. A plan to invest in a new crude oil refinery and an associated petrochemical plant will remain necessary to reduce the amount of refined petroleum products imported.

Through a Non-Disclosure Agreement and a Memorandum of Cooperation between the Central Energy Fund (CEF) and Saudi Aramco, the national oil company of Saudi Arabia, we will ensure that South Africa is a hub for crude oil refining in the region. Opportunities have been identified with Saudi Aramco as an investor in the refinery at Richards Bay.

Mining

The introduction of a new mining regime by the democratic government has created a conducive and predictable regulatory framework which has revitalised the mining industry in the country and contributed positively to the socio-economic development of the people of the South Africa. Policy instruments such as the finalised Mining Charter and its implementation guidelines have further ensured policy certainty in the sector.

Mining remains a sunrise sector that can still sustainably develop our country. It is for this reason that the DMRE will move with speed to finalise the Upstream Petroleum Bill. The Bill is intended to provide regulatory certainty to the upstream petroleum industry and to stimulate growth and development of this sector. The development of a separate oil and gas policy will correct some of the uncertainties that have plagued the sector because of its regulation together with minerals under the Mineral and Petroleum Resources Development Act (MPRDA) and further realise a delicate balance between the need to attract investment and ensure the potential of the upstream industry benefits for all South Africans.

Equally important to the sustainability of the sector, is the need to ensure the health and safety of mineworkers. We will work harder with stakeholders in the sector to further ensure that the downward trend in fatalities is maintained and improved. As we go about doing our business in the sector, we should always be mindful that mineworkers are breadwinners whose loss of life has devastating effects to their families and communities. As a Regulator of the sector, the implementation and the enforcement measures contained in the Mine Health and Safety Act, particularly section 54, remains a key priority. Collectively with our social partners, we will work harder to achieve the goal of a fatality-free mining industry.

In conclusion, I wish to thank the Chairperson and Members of the Portfolio Committee on Mineral Resources and Energy and entities reporting to the DMRE.

I wish to thank the Director-General and Team Mineral Resources and Energy for their support in advancing the strategy to ensure that delivery in all areas is effective and efficient for a better South Africa.

Executive Authority of the Department of Mineral Resources and Energy

Accounting Officer Statement

The period 2020/21 marks the inaugural planning cycle of the sixth administration following the election, and the merger of the Department of Energy and the Department of Mineral Resources into the Department of Mineral Resources and Energy in June 2019. The merger intends to equip and capacitate the DMRE to respond to the strategic objectives derived from the National Development Plan (NDP), as they relate to the regulation and transformation of the energy and mining sectors in the following manner:

- Provisioning of secure, sustainable and affordable energy
- The promotion and regulation of minerals and mining

The objective is aligned to develop a mineral resources and energy sector that promotes economic growth and development, social equity and environmental sustainability.

The following table summarises the six DMRE programmes as articulated in the start-up structure:

Programme	Programme Purpose
Administration	Provide strategic support and management services to the Ministry and the DMRE
Minerals and Petroleum Regulation	Regulate the mining, minerals and petroleum industry
Mining, Minerals and Energy Policy Development	Formulate and maintain an integrated minerals and energy policy to promote and encourage investment into the mining and energy industry
Mine Health and Safety Inspectorate	Ensure healthy and safety of employees in the mines
Programmes and Projects	Manage, coordinate and monitor programmes and projects focused on access to mineral and energy resources
Nuclear Energy	Manage nuclear industry

In support of the Executive Authority's Statement, an overview of the programme priorities is presented below. It is important to reflect on commitments made in the past five-year term of the fifth administration to align the Annual Performance Plan targets with the 2019-2024 Medium Term Strategic Framework.

Integrated Resource Plan (IRP2019)

Strategically, IRP2019 is the leading policy framework for addressing the short- to long-term challenges that the country faces with regards to its energy needs. IRP2019 formulates specific interventions to address electricity infrastructure development based on least-cost electricity supply and demand balance, considering security of supply and the environment (minimising negative emissions and water usage).

IRP2019 identifies the preferred generation technology required to meet expected demand growth up to 2030. The available options are summarised in the paragraphs below.

Coal: Beyond Medupi and Kusile, coal will continue to play a significant role in electricity generation in South Africa in the foreseeable future as it is the largest base of installed generation capacity and makes up the largest share of energy generated. Due to the design life of the existing coal fleet and the abundance of coal resources, new investments must be made into more efficient coal technologies (High-Efficiency, Low-Emissions (HELE)) technology, including supercritical and ultra-supercritical power plants with Carbon Capture, Utilisation and Storage (CCUS) to comply with climate and environmental requirements. The stance adopted by the Organization for Economic Cooperation and Development and financial institutions regarding financing coal power plants, is to consider the support of HELE technology. This ensures that South African coal still plays an integral part in the energy mix. Given the significant investments required for carbon capture and storage (CCS) and CCUS technology, South Africa could benefit from establishing strategic partnerships with international organisations and countries that have made advancements in the development of CCS, CCUS and other HELE technologies.

Nuclear: Koeberg Power Station will reach its end of design life in 2024. To avoid the demise of nuclear power in the energy mix, South Africa has granted an extension on the design life and the expansion of the nuclear power programme into the future. In line with power system requirements, additional capacity from any technology deployed should be done at a scale and pace that flexibly responds to the economy and associated electricity demand, in a manner that avoids tariff shocks in particular; it is the user of electricity that ultimately pays. To this end, as is the case with coal, small nuclear units will be a manageable investment when compared to a fleet approach. The development of such plants globally is therefore particularly interesting for South Africa, and upfront planning with regard to additional nuclear capacity is a requisite, given the less than 10-year lead time, for timely decision making and implementation.

Natural Gas: Gas-to-power technologies in the form of CCGT, CCGE or ICE provide the flexibility required to complement renewable energy. While in the short term the opportunity is to pursue gas import options, local and regional gas resources will allow for scaling up within manageable risk levels. Exploration to assess the magnitude of local recoverable shale and coastal gas are being pursued and must be accelerated. There is enormous potential and opportunity in this respect and the Brulpadda gas resource discovery in the Outeniqua Basin of South Africa, piped natural gas from Mozambique (Rovuma Basin), and indigenous gas like coal-bed methane and ultimately shale gas, could form a central part of the strategy for regional economic integration within SADC. Co-operation with neighbouring countries is being pursued and partnerships are being developed for joint exploitation and beneficiation of natural gas within the SADC region. SADC is developing a Gas Master Plan, to identify the short- and long-term infrastructure requirements to enable the uptake of a natural gas market. Availability of gas provides an opportunity to convert to CCGT and run open-cycle gas turbine plants at Ankerlig (Saldanha Bay), Gourikwa (Mossel Bay), Avon (Outside Durban) and Dedisa (Coega IDZ) on gas.

Renewable Energy: Solar photovoltaic (PV), wind and concentrated solar power (CSP) with storage present an opportunity to diversify the electricity mix, to produce distributed generation and to provide off-grid electricity. Renewable technologies also present ample potential for the creation of new industries, job creation and localisation across the value chain. The Wind Atlas developed for South Africa provides a basis for the quantification of the potential that wind holds for power generation elsewhere in the country, over and above the prevalence of wind resources around the coastal areas. Most wind projects have been developed in the Western Cape and Eastern Cape thus far. The generation of electricity and heat (to be supplied for industrial processes), through biomass and biogas holds huge potential in South Africa, recognising that such projects range from small (kW) to larger (MW) scale and could be distributed across the industrial centres. Biomass from the waste, paper and pulp, and sugar industries can be utilised in co-generation plants and deliver electricity at a price-competitive level with minimal transmission and distribution infrastructure requirements. When deployed together, the nexus between the biomass and a government-backed biofuels programmes could improve the economics of the initiatives and create job opportunities in rural and urban centers.

Energy Storage: There is a harmonising relationship between Smart Grid systems, energy storage, and non-dispatchable renewable energy technologies based on wind and solar PV. This is highlighted in **Policy Position 5** where the requirement is that the current annual build limits on renewables (wind and photovoltaic) be retained, pending the report on a just transition. The traditional power delivery model is being disrupted by technological developments related to energy storage, and more renewable energy can be harnessed despite the reality that the timing of its production might be during low-demand periods. Storage technologies including battery systems, compressed air energy storage, flywheel energy storage, hydrogen fuel cells etc. are developments which can address this issue, especially in the South African context where over 6 GW of renewable energy has been introduced, yet the power system does not have the requisite storage capacity or flexibility.

Energy efficiency strategy

Energy efficiency has tremendous potential to boost economic growth and avoid greenhouse gas emissions, but the global rate of progress is slowing – a trend that has major implications for consumers, businesses and the environment. Energy Efficiency 2019 examines the reasons for this recent deceleration in efficiency progress and includes a special focus on how digitalisation is transforming energy efficiency and increasing its value.

The mission of the DMRE is to develop measures to promote energy saving, reduce the negative impact of energy use on the environment, reduce energy costs to the economy, contribute towards sustainable development, and to achieve a national energy policy. The vision is to optimise energy sector development through efficient utilisation, production and consumption of energy resources. The National Energy Efficiency Strategy of South Africa, was approved by Cabinet in March 2005 and reviewed in October 2008 and sets the target for improved energy efficiency in South Africa at 12% by 2015.

Electricity has contributed to South Africa's economic growth and service delivery to the poor. When a utility or local authority which supplies electricity influences the way it is used by customers, this activity is known as Demand Side Management (DSM). The strategy includes Eskom's DSM. Municipalities are also implementing their own energy efficiency strategies.

Procurement of emergency power

The DMRE released a Request for Information (RFI) on power projects that can deliver power to the grid in the shortest possible time on a least-cost and a least-regret approach. The RFI helps to assess availability of immediate implementable generation options and the commercial terms expected by these projects. Four hundred and eighty-one (481) responses were received, which include energy supply options and Demand Side Management options for gas, liquid fuels, coal, renewables, storage and nuclear. Preliminary analysis shows that some proposals can bring power to the grid in less than twenty-four months. It also suggests that longer-term contracting is required to ensure prices do not negatively affect the current tariffs.

Generation for own use

Licensing of generation for own use of above one megawatt (1 MW), which is mainly to supplement power supply to commercial and industrial customers including the mines, has been eased. IRP2019 provides for distributed generation for own use above 1 MW, removing the requirement for Ministerial approval for deviation from the IRP, before NERSA processes a generation licence application. NERSA has committed to urgently process the licensing of duly admitted applications.

Enabling municipalities to procure their own power from IPPs

The DMRE is developing regulations to ensure regulatory certainty, which are aligned with the Electricity Regulation Act, for municipalities to procure or develop their own power generation. The regulations will require that a municipality should align with IRP2019 and all other applicable laws. For long-term sustainability, a municipality must demonstrate diversity in its customer base and that electricity revenue collection meets its electricity operations and energy buying costs. This is especially critical to ensure that paying customers – especially commercial - are not burdened with high electricity tariffs as compensation for non-paying users.

Sovereign wealth fund and specialised units on crime

The DMRE has included in the Draft Upstream Petroleum Resource Development Bill, released for public comments in 2019, a proposal on a sovereign wealth fund to be created through royalties from South Africa's mineral resources. Regarding specialised units for organised crime, the Minister of Police and key role players in the mining industry will be engaged to tackle illegal mining, which contributes to gender-based violence and social instability in mining communities and is negative to the economy.

Carbon capture, utilisation and storage

To mitigate health impacts, industry compliance with air quality legislation has to be ensured, including the implementation of cleaner coal technologies, such as carbon capture, utilisation and storage (CCUS). Such plant retrofits will be implemented cost-effectively and in consideration of both economically available alternatives and envisioned social consequences. In 2009, the South African National Development Energy Institute (SANEDI) created the South African Centre for Carbon Capture and Storage, which is funded by the South African government, the World Bank, the European Union, Eskom

and private sector companies such as Anglo American. The centre is mandated to explore carbon capture and storage (CCS) in the country and has made good strides in research into CCS and its potential use through the collaboration. Efforts in this area are being stepped up to include SANEDI's recent membership of the Global CCS Institute and the DMRE's continuing participation in the carbon capture, utilisation and storage work of the International Energy Agency (IEA).

Exploration (Mining and Petroleum)

Focusing on the concentration of petroleum and minerals, it will be necessary to encourage partnerships between emerging junior miners, and conduct a legislation review with regards to the petroleum bill to encourage inclusive, equitable and competitive exploration. The requirement for an optimal legislative framework for petroleum will be addressed by expediting the legislative processing framework.

Transformation will be addressed by imposing compliance with relevant legislation. This response will be evident in the minerals and petroleum sectors reflecting the country's demographics. The DMRE commits to ensuring regulatory and legislative certainty through several channels, including the development of comprehensive legal guidelines aligned with the objects of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA) (e.g. optimal exploration, substantial and meaningful participation by Historically Disadvantaged South Africans) 2003 (Act No. 60 of 2003).

Access to land for exploration, together with monitoring of compliance, will be achieved by engaging with respective landowners (including trusts, chiefs, and municipalities), as well as establishing a framework for engagements, exploration and monitoring.

To reduce **licensing turnaround times**, relevant legislation will be reviewed and strengthened. Capacity in terms of human resources will be strengthened, and the licensing process will be reviewed. Technology will enable the tracking and unblocking of bottlenecks, and improvement of communication. Co-operation between the DMRE, DWS and DEA towards implementing one environmental system will be encouraged.

The strategic responses to the mining sector challenges will be enhanced by commitments from supporting SOEs and are summarised below.

Licensing turnaround times will be addressed by reviewing and strengthening relevant legislation, strengthening capacity through human resources and reviewing the licensing process through technology to track and unblock delays. The DMRE, DWS and DEA will cooperate around one environmental system. These responses vary between high and low priority, ultimately resulting in an expedient licensing regime. The Mineral and Petroleum Branch is responsible for these interventions.

Infrastructure development including energy, rail, water and other examples is regarded as a high priority. The appropriate response includes engaging with all the relevant departments to co-ordinate efforts. This is a short- to long-term strategy, aimed at increasing the availability of support infrastructure for mining. The Policy Branch is best positioned to manage this process.

To address concerns around the **cost of energy to mining houses**, the sector will be encouraged to generate its own energy, and will explore if another entity can be established to assist in energy generation. More meaningful state participation in Eskom's coal supply will also improve energy costs for heavy users. This will contribute to delivering sustainable and affordable energy for mining.

Mining research is lagging due to a lack of support capacity. The expansion of the mandates of the respective entities is proposed to support research in mining and enhance their capacity. This should result in improved support for mining research and increase the competitiveness of the South African mining industry.

The **legislative framework to prevent illegal mining** will be revised. Small-scale mining must be encouraged. Supporting artisanal miners will encourage legitimate mining, particularly if backed by a framework on how to support the artisanal miners - this framework must still be developed.

A significant number of mines remain under care maintenance, requiring a framework to deal with these mines. Specifically, such mines should not be decommissioned without investigating their viability more vigorously. This will encourage the optimal utilisation of South Africa's mineral resources.

Mineral beneficiation

To create access to minerals for beneficiation, necessary licensing conditions need to be created. Section 50 of the MPRDA must be revisited to help increase domestic beneficiation.

The cost for beneficiation needs to improve to deliver cost-effective beneficiation. Addressing import parity pricing will help deliver this outcome, as well as addressing the cost of energy. Access to international markets for beneficiating products can be improved. This can be done by using bilateral and multilateral agreements to facilitate preferential access, which can increase exports of manufactured products.

To address the impact of a lack of innovation on mining beneficiation, investment in research and development will be increased. There will also be a focus on upskilling and increasing capacity, to diversify products and improve the country's manufacturing capability.

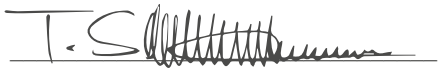
Mine health and safety

A review of legislation, and DMRE-led facilitation between the mines and communities, will reduce negative impacts of mining on communities. Compliance with legislative frameworks will be enforced to address fatalities, injuries and diseases. Research will be conducted to improve health and safety, including the development of technologies for fall-of-ground accidents. The investigative skills and capacity of the inspectorate will be improved, particularly to reduce reliance on external parties. The inspectorate's capacity will be enhanced with more human resources.

A review of the legislation on health and safety relating to upstream petroleum and hydraulic fracturing will ensure zero harm to mine workers. The security and safety of women in mining with regards to gender-based violence is a high priority. The implementation of guidelines and directives will create a conducive working environment for women in mining. To address illegal mining, stakeholder forums will be formalised between mines, the DMRE and law enforcement agencies.

In conclusion, I wish to thank the Minister for his leadership and commitment, the entities reporting to the DMRE, and the sector. I am confident that the DMRE will finalise all its pending legislation and improve operational efficiency to drive socio-economic growth and development.

I commit Team Mineral Resources and Energy to continue to display high levels of excellence and dedication in the service of the people of South Africa.

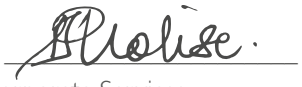


Accounting Officer of the Department of Mineral Resources and Energy

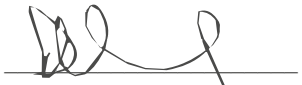
Official Sign-Off

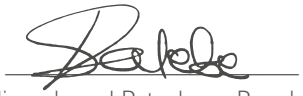
It is hereby certified that this Annual Performance Plan:

- Was developed by the Management of the Department of Mineral Resources and Energy under the guidance of Minister Gwede Mantashe
- Takes into account all the relevant policies, legislation and other mandates for which the Department of Mineral Resources and Energy is responsible
- Accurately reflects the impact, outcomes and outputs which the Department of Mineral Resources and Energy will endeavour to achieve over the period of the 2020/21 financial year.

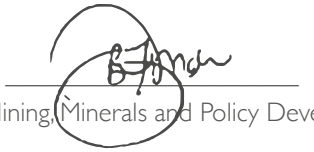
Signature: 
Branch: Corporate Services

Signature: 
Branch: Corporate Services

Signature: 
Branch: Mine, Health and Safety Inspectorate

Signature: 
Branch: Minerals and Petroleum Regulation

Signature: 
Branch: Minerals and Petroleum Regulation

Signature: 
Branch: Mining, Minerals and Policy Development

Signature: 
Branch: Programmes and Projects

Signature: _____
Branch: Nuclear

Signature: _____
Chief Financial Officer

Signature: _____
Official Responsible for Planning

Signature: _____
Accounting Officer

Signature: _____
Official Responsible for Planning

Approved by:

Signature: _____
Executive Authority
Mr SG Mantashe, MP

Part A
The Strategic Mandate

1 Updates to the relevant legislative and policy mandates

The Department of Mineral Resources and Energy derives its mandate from Section 24 of the Constitution of South Africa, 1996 (Act No. 108 of 1996).

1.1 Legislative mandate

The DMRE derives its founding mandate from the Minerals and Mining Policy for South Africa (White Paper, 1998), which ensures the transparent and efficient regulation of the development of South Africa's mineral resources and mineral industry to meet national objectives and bring optimum benefit to the country.

The mining arm of the DMRE is primarily regulated through the Mineral and Petroleum Development Act, 2002 (Act No. 28 of 2002) and the Mine Health and Safety Act, 1996 (Act No. 29 of 1996). The two Acts provide the regulatory framework for the promotion regulation and health and safety of workers in the mining, minerals and petroleum industry. They provide a regulatory framework for ensuring equitable access to and sustainable development of the nation's mineral resources and related matters.

1.2 Policy mandate

The White Paper on Energy Policy (1998), supplemented by the White Paper on Renewable Energy of 2003, sets out government's overarching position on the supply and consumption of energy. Applicable policies include:

- The National Development Plan
- The Integrated Energy Plan (IEP)
- The Integrated Resource Plan (IRP)
- The Electricity Pricing Policy (EPP)
- The Nuclear Energy Policy of 2008
- The Paris Agreement (2016) on Climate Change
- The National Energy Act, 2008 (Act No. 34 of 2008)
- A range of legislation regulating Nuclear Energy1
- National Environmental Management Air Quality Act (Act No. 39 of 2004)

The Principal Acts that drive the work of the DMRE are:

- National Energy Act, 2008 (Act No. 34 of 2008)
- Electricity Regulation Act, 2006 (Act No. 4 of 2006), as amended
- Petroleum Products Act, 1977 (Act No. 120 of 1977), as amended
- Central Energy Fund Act, 1977 (Act No. 38 of 1977), as amended
- Nuclear Energy Act, 1999 (Act No. 46 of 1999)
- National Nuclear Regulatory Act, 1999 (Act No. 47 of 1999)
- National Radioactive Waste Disposal Institute Act, 2008 (Act No. 53 of 2008)
- Petroleum Pipelines Act, 2003 (Act No. 60 of 2003)
- Petroleum Pipelines Levies Act, 2004 (Act No. 28 of 2004)
- Gas Act, 2001 (Act No. 48 of 2001)
- Gas Regulator Levies Act, 2002 (Act No. 75 of 2002)
- National Energy Regulator Act, 2004 (Act No. 40 of 2004)
- Abolition of the National Energy Council Act, 1991 (Act 95 of 1991)

In addition to the Acts, the following laws impact the energy sector:

- The National Environmental Management Act, 1999 (Act No. 107 of 1999), has a direct impact on legislative and other measures to reduce carbon emissions, energy efficiency and mitigation of the impact of the generation/refinement and use of energy on the environment
- The Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)
- The National Environmental Management Act, 1999 (Act No. 107 of 1999)
- The Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)
- The Disaster Management Act, 2002 (Act No. 57 of 2002)
- The Hazardous Substances Act, 1973 (Act No. 16 of 1973)
- The National Ports Act, 2005 (Act No. 12 of 2005)
- Mine Health and Safety Act (Act No. 29 of 1996)
- Mineral and Petroleum Resources Development Act (Act No. 28 of 2002)
- The National Energy Act, 2008 (Act No. 34 of 2008)
- The Petroleum Products Act, 1977 (Act No. 120 of 1977), as amended
- The Electricity Regulation Act, 2006 (Act No. 4 of 2006), as amended

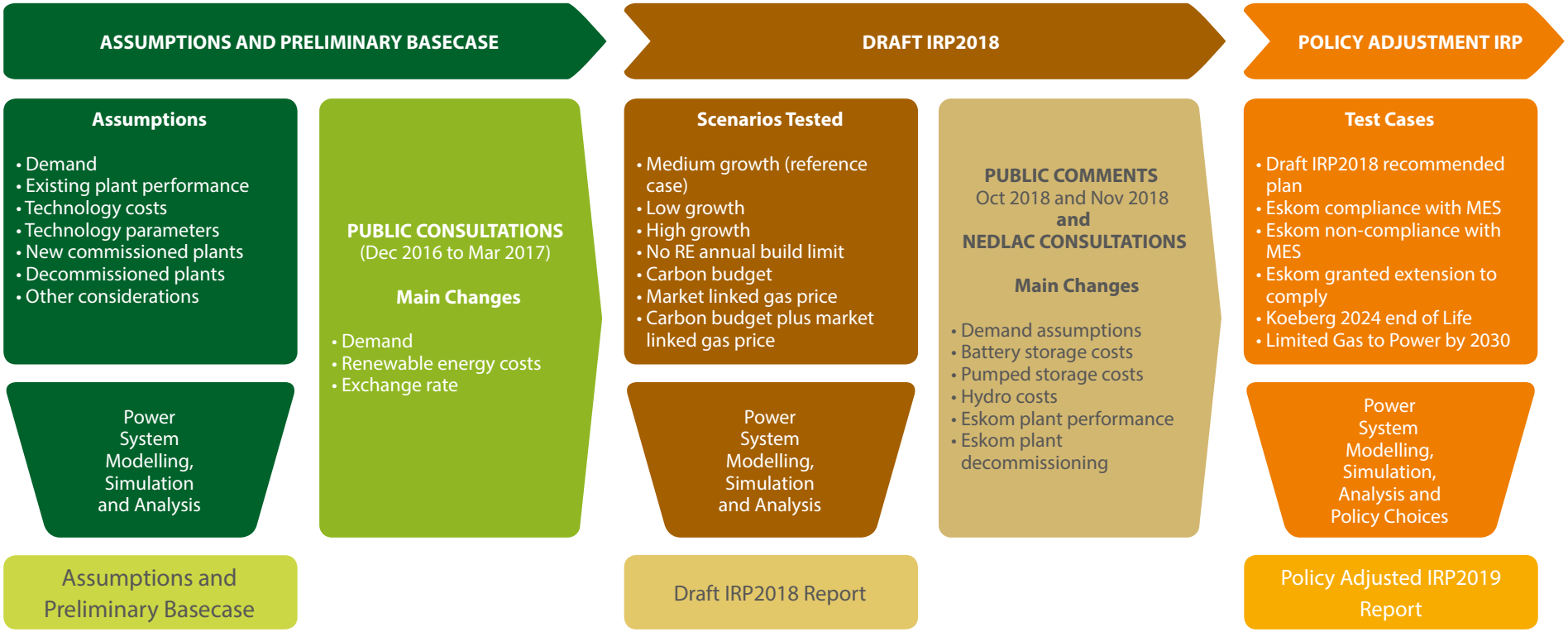
2 Updates to institutional policies and strategies

2.1 The Integrated Resource Plan (IRP)

The Integrated Resource Plan (IRP) is a legal instrument for South Africa's energy generation planning. Considered under the Electricity Regulation Act, the IRP is designed to help meet forecast annual peak and energy demand, as well as some established reserve margin. This will be achieved through a combination of supply-side and demand-side resources over a specified future period and driven by a set of predetermined objectives:

- To ensure the security of South Africa's energy supply
- To reduce the cost of South Africa's energy supply
- To minimise water usage related to energy supply
- To reduce CO_2 emissions from power generation

The IRP has been updated through a multi-stage process, which included public and sector consultations.



Cabinet approved the Draft IRP2018, which was published in August 2018. Between October and November 2018, public comments were invited and there were consultations with the National Economic Development and Labour Council (NEDLAC), while the Portfolio Committee on Energy conducted public input sessions. Overall, 5 929 comments were received, of which 242 were substantive.

The consultation and comment process delivered numerous changes to the 2018 draft. The CSIR HLI forecast with the calendar year 2018 actuals (peak demand and annual energy) was rebased, and the Medium-Term Strategic Adequacy Outlook (MTSAO) 2018 was used. It inspired the low demand Average Annual Growth rate.

Eskom's new submissions were added to reflect the lower Energy Availability Factor (EAF) and to reflect early shutdowns among the existing Eskom fleet. The revision of the Minimum Emission Standard (MES) application was included, and the draft was changed to reflect Koeberg Nuclear Power Plant's end of life.

Hydro options from Mozambique were included, storage costs for batteries were updated, and the draft incorporated revelations based on a study commissioned from Lazard, the financial advisory and asset management firm.

Through a process of power system modelling, simulation, analysis and policy choices, the Policy-Adjusted IRP2019 Report was compiled.

2.2 Integrated Energy Plan (IEP)

The development of a National Integrated Energy Plan (IEP) was envisaged in the White Paper on the Energy Policy of the Republic of South Africa of 1998 and, in terms of the National Energy Act, 2008 (Act No. 34 of 2008), the Minister is mandated to develop and publish the IEP in the Government Gazette. The IEP provides a roadmap of the future energy landscape for South Africa which guides future energy infrastructure investments and policy development. The IEP examines current energy consumption trends within different sectors of the economy (i.e. agriculture, commerce, industry, residential and transport) and uses this to project future energy requirements, based on different scenarios.

While the IEP focuses on demand for all energy forms across all the economic sectors at a high level, more detailed analysis of different demand growth profiles and supply-side options for the two main energy sub-sectors, namely: electricity generation and liquid fuels supply, will be detailed in supporting sector plans. For the gas sub-sector, a draft framework which explores future possible options for the development of a gas market in South Africa is being developed. This has been undertaken to analyse the differences in each of the sectors considering the complexities and level of maturity of each sub-sector.

The DMRE has published a draft report on the IEP and IRP Assumptions and the Base Case for comments. Supporting annexures, including a report on the detailed scenarios for liquid fuel supply are available on the DMRE's website for comment. Comments received will be considered in preparing a draft final IRP Update which will be submitted to Cabinet for approval.

2.3 Integrated National Electrification Programme

The DMRE is responsible for the formulation of policies and regulations for the energy sector. Through the Integrated National Electrification Programme, the DMRE is responsible for assisting municipalities with funding for implementation of electrification projects so that universal access to electricity is reached by 2025.

Beyond reaching universal access to energy for all and addressing electrification backlog, it is vital that policy guidelines are adhered to when implementing electrification projects through the Integrated National Electrification Programme (INEP). The electrification policies are summarised below.

Suite of Supply Policy

The Suite of Supply Policy covers all project categories such as bulk infrastructure and household connections, which includes electrification of domestic households, informal settlements, farm dweller houses, Communal Property Association (CPA) and Communal Rental Units (CRU).

Farm Dweller Houses Policy

Other polices such as farm dweller and un-proclaimed areas are linked to the suite of supply policy and bulk infrastructure. All policies provide guidance in terms of how electrification projects should be funded by the DMRE through its implementing agencies such as Eskom and municipalities.

Un-proclaimed Areas Policy

While the focus is on addressing traditional backlog, the DMRE must ensure that funding for electrification of new households is made available. Due to several factors, there are many un-proclaimed and informal settlements which municipalities wish to electrify as part of the programme. The un-proclaimed areas policy looks at such areas and sets out guidelines and criteria to be followed in providing funding for them.

Non-grid Electrification Policy

The electrification programme is unable to ensure grid electrification of all remote rural areas in the short or medium-term, therefore non-grid electrification was identified as an interim solution. The non-grid electrification programme is designed to temporarily give deep rural communities access to limited electricity until such time that grid connections are possible. Solar Home Systems (SHS) are given to households as part of the non-grid electrification programme.

Bulk Infrastructure Policy

Before an electrification project is implemented, it is crucial to check if there is bulk infrastructure to supply the area with electricity. Bulk infrastructure is outlined in the Suite of Supply Policy whereby all bulk infrastructure projects such as building of new substations, new High and Medium Voltage lines and upgrading and refurbishment of the electrical networks are outlined, hence a reliable electrical infrastructure is critical when implementing electrification projects.

Mixed Developments Policy

Mixed developments refer to developments where an area is developed and has a component of fully subsidised RDP houses, social housing, and partially and fully bonded houses (Low Cost, GAP, BNG). Such developments are done by developers in partnership with government. Since these developments are increasing in numbers, this policy addresses their requirements.

2.4 The Renewable Energy Independent Power Producer Procurement Programme (REIPPPP)

The Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) was established by the Department of Mineral Resources and Energy (DMRE) in conjunction with the National Treasury and the Development Bank of Southern Africa (DBSA) at the end of 2010. The REIPPPP is one of government's urgent interventions to enhance the country's power generation capacity. Its main objective is to secure private sector investment for the development of new electricity generation capacity, thereby giving effect to the policy decision to diversify South Africa's energy mix which was articulated in the 1998 White Paper on Energy Policy of South Africa. The REIPPPP has been designed to contribute to broader national developmental objectives such as job creation, social upliftment and economic transformation, primarily through broadening of economic ownership. The IPP Office was established with a mandate to implement this programme and achieve its broader objectives.

2.5 Gas Utilisation Master Plan

The Gas Utilisation Master Plan (GUMP), scopes the development of gas pipeline infrastructure for the country's needs and to connect South Africa with African countries endowed with vast natural gas resources.

The GUMP is a roadmap which analyses the potential and opportunity for the development of South Africa's gas economy and sets out a plan of how this could be achieved. A key objective of the GUMP is to enable the development of indigenous gas resources and stimulate the introduction of a portfolio of gas supply options. The Gas to Power Programme will provide a market for a potential supply of gas. It also provides long-term gas demand sinks for future indigenous gas supplies.

2.6 Mining Charter

Against the backdrop of concerns around the pace of transformation in the mining and minerals industry, government published the third iteration of the Broad-Based Black Socio-Economic Empowerment Charter for the South African Mining and Minerals Industry, known as the Mining Charter, aimed at strengthening its effectiveness, while considering the realities facing the industry.

The Mining Charter was first developed in 2002 and amended in 2010. It served as an instrument through which the Minerals and Petroleum Resources Development Act (MPRDA) could advance transformation in the industry. Following another assessment on the effectiveness of the Charter, the most recent review was gazetted in draft on 26 September 2018 (the "2018 Charter"). This 2018 Mining Charter, alongside the MPRDA and SLP amendments, offers an opportunity to improve regulatory and policy certainty, and subsequently investor perception.

The 2018 Charter introduced new targets and measurement criteria aimed at accelerating the country's transformation agenda within the industry, and a degree of alignment with certain compliance measures and criteria used in **the dti** Broad-Based Black Economic Empowerment Codes of Good Practice (B-BBEE Codes). The revised Charter will drive value beyond compliance within the South African mining ecosystems while continuing a journey of redressing historic inequalities.

- A new concept and scorecard: The 2018 Mining Charter introduced a new concept by declaring Ownership, Mine Community Development and Housing and Living Conditions as, what is termed, a ring-fenced element, which requires 100% compliance. Only the procurement, Employment Equity and Human Resource Development of the old scorecard remain weighted elements in the proposed new scorecard.
- The Mining Charter scorecard has formally been aligned with **the dti's** Codes of Good Practice. Compliance is now in accordance with the recognition levels (1-8).

2.7 Mineral beneficiation

Government has committed to the promotion of local beneficiation through legislation. **The Mineral and Petroleum Resources Development Act, 2002 (Act No. 26 of 2002)** includes provisions that will ensure that:

1. The Minister of Mineral Resources and Energy promotes the beneficiation of minerals in the country.
2. If the Minister, acting on the advice of the Board and after consultation with the Minister of Trade and Industry, finds that a particular mineral can be beneficiated economically in South Africa, the Minister may promote such beneficiation subject to terms and conditions as the Minister determines.
3. Any person who intends to beneficiate any mineral mined in the country or outside the country may only do so after written notice and in consultation with the Minister.

The South African Mining Charter of 2004 specifically stipulates that mining companies can offset the value of the level of beneficiation achieved by the company against its HDSA ownership commitments.

The Diamonds Amendment Act, 2005 (Act No. 29 of 2005 and Act No. 30 of 2005) and the Diamonds Second Amendment Act, 2005 (Act No. 30 of 2005): The rationale for the amendment of the Diamonds Act, 1986 (Act No. 56 of 1986) was to: increase access to rough diamonds for jewellery manufacturing in South Africa; maintain security of supply of rough diamonds; promote the beneficiation industry in South Africa thus creating jobs; and increase broad-based participation throughout the diamond value chain.

The Precious Metals Act, 2005 (Act No. 37 of 2005): This Act provides for acquisition, possession, smelting, refining, beneficiation, use and disposal of precious metals. Precious metals include gold and the platinum group metals (PGMs).

2.8 Shale gas research project

The Council for Geoscience (CGS) and Petroleum Oil and Gas Corporation of South Africa (PetroSA) are undertaking shale gas research that unlocks the unknowns and assumptions about shale gas occurrence in the country. The project will build scientific skills in shale gas exploration and exploitation as this resource has not been exploited in the country.

The programme is funded by the DMRE and will assist government in making well informed decisions about the future of shale gas in South Africa.

The programme aims to collect and review new geological information to define an environmental baseline, to assess the amount of recoverable gas mainly from the Whitehill and Prince Albert Formations, to cover various geo-environmental impacts like ground water dynamics with possible contamination, and monitor potential seismic interferences.

The Shale Gas Project will serve as a baseline study for future shale gas research work and play a vital role in review of petroleum exploration and exploitation regulations. NEMA regulations will create a framework to identify shortfalls of the environmental impacts of the shale gas.

2.9 Nuclear

South Africa is a member state to the International Atomic Energy Agency (IAEA). The peaceful use of nuclear in South Africa will contribute to the country's national programme of socio-economic development and growth and is guided by national legislation and policies in line with the country's international obligations. To ensure peaceful applications of nuclear energy, nuclear authorisations or denials are issued for nuclear material, related equipment and nuclear technology required by various industries that significantly contribute to the economy. Regulations on physical protective measures for nuclear material will be promulgated to strengthen nuclear security measures for the nuclear industry and related institutions.

The Nuclear Energy Policy of 2008 provides the government vision to become self-sufficient in all the aspect of the nuclear value chain for peaceful use. Amongst government's policy objectives is the promotion of nuclear energy as an important electricity supply option through the establishment of a national industrial capability for the design, manufacture and construction of nuclear energy systems.

South Africa is the only country in Africa generating nuclear power, through its Koeberg Nuclear Power Station. The extension of design life of the Koeberg Power Station is critical for continued energy security in the period beyond 2024, when it reaches the end of its 40-year design life. In accordance with IRP2019 Decision 2: Koeberg Power Plant's design life must be extended by another 20 years by undertaking the necessary technical and regulatory work. Similarly in accordance with IRP2019, Decision 8: The DMRE will commence preparations for a nuclear build programme to the extent of 2 500 MW at a pace and scale that the country can afford because it is a no-regret option in the long term.

3 Updates to relevant court rulings

- The majority of judgements relate to Minerals and Petroleum licensing matters, given the volume of applications processed annually in these sectors in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) and the Petroleum Products Act, 1977 (Act No.20 of 1977).
- The Sabie and Resilient judgements, related to bulk electricity disconnections by Eskom for non-payment by the Thaba Chweu and Emalahleni municipalities respectively, is subject to an application for leave to appeal. This matter is not opposed by the Minister or the DMRE.
- The Coal Transporters Forum matter is subject to an application for leave to appeal to the Supreme Court of Appeal (SCA) by the Forum. The matter is opposed by 33 respondent parties, including NERSA, Eskom and the IPPs.
- The Chamber of Mines matter in which a declaratory order was handed down by the High Court in relation to the enforceability of the Mining Charter and the interpretation of the ownership element, has resulted in further ongoing litigation to establish legal certainty on government's regulatory authority to achieve transformation in the minerals and mining sector.
- The Baleni judgement, which is currently on appeal to the SCA, deals with the question of whether the consent of traditional communities is required where mining rights to the land occupied by them have been granted by the Minister.
- In the Treasure the Karoo and another matter, the regulations for petroleum exploration and production were declared invalid and set aside by the SCA. Authorisation of shale gas exploration which involves hydraulic fracturing will only be possible once new regulations have been promulgated under NEMA.

Part B
Strategic Focus

4 Updated situational analysis

The situational analysis highlights key developments in the global, African and South African context, to provide a holistic picture of the external economic and environmental factors that impact the DMRE. The analysis includes an external overview considering key elements of the PESTLE framework, as well as internal analysis that reflects on past organisational performance. A more detailed situational analysis is included in the DMRE Strategic Plan.

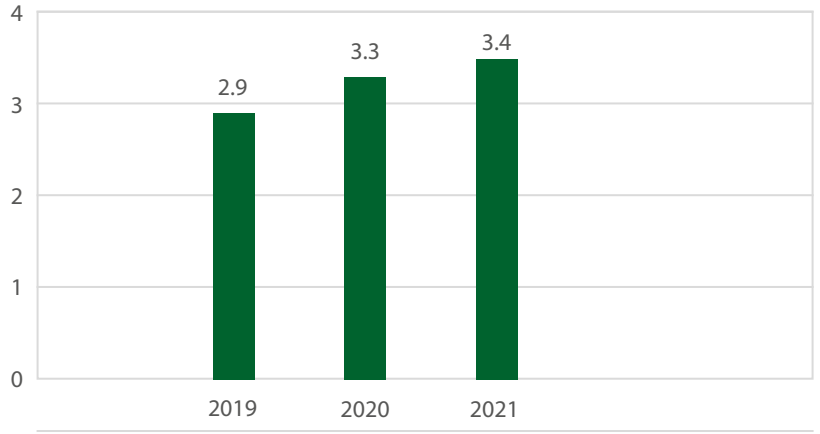
4.1 External environmental analysis

4.1.1 Global context

The global economy is in a synchronised slowdown, with economies generally experiencing a moderation in their growth performances[1] (Figure 1).

The US Federal Reserve lowered its policy rate by 25 basis points each at its August, September and October meetings[3]. The European Central Bank, in turn, has limited room to utilise interest rates in support of growth and therefore announced the resumption of its quantitative easing programme for an indefinite period.

Economic activity and business sentiment are weakening in the face of uncertainty; as a result growth in global industrial production is stagnating, with contractions recorded in Europe. The situation has led to the sharp decline of sentiment levels among manufacturers in advanced economies as seen in Figures 2 and 3.



Global growth is projected to rise from an estimated 2.9% in 2019 to 3.3% in 2020 and 3.4% for 2021– a downward revision of 0.1% for 2019 and 2020 and 0.2% for 2021 compared to those in the October World Economic Outlook (WEO). The downward revision primarily reflects negative surprises to economic activity in a few emerging market economies, notably India, which led to a reassessment of growth prospects over the next two years. In a few cases, this reassessment reflects the impact of increased social unrest.

Several key economic variables are reflecting the deteriorating economic, trading, investment and risk environments. Relatively subdued inflationary pressures and moderating growth are underscoring the accommodative monetary policy stances being maintained by central banks around the globe.

Figure 1: Global growth projections[2]

1 *IDC-Economic Overview 2019*
2 *World Economic Outlook 2020 (International Monetary Fund)*
3 *https://www.imf.org/en/Publications/WEO/Issues/2019/07/18/WEOupdateJuly2019*

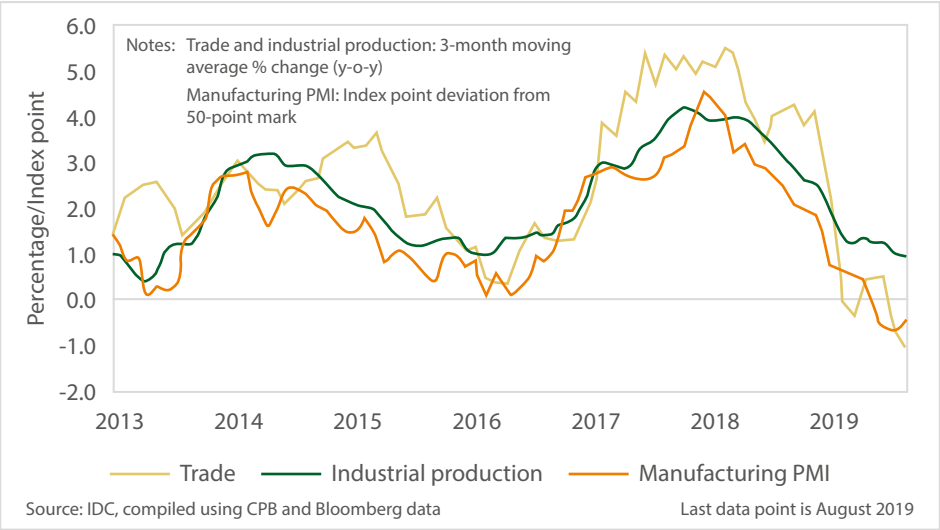


Figure 2: World trade, industrial production and the manufacturing PMI

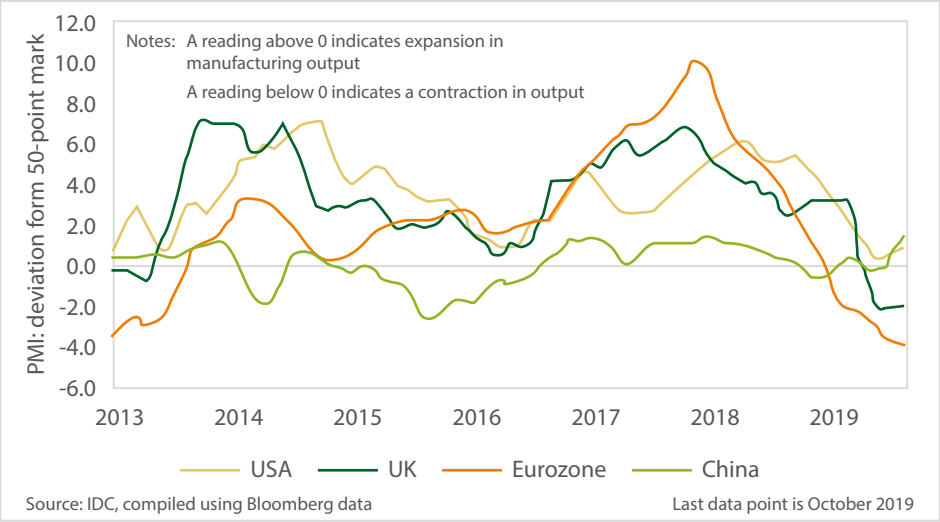
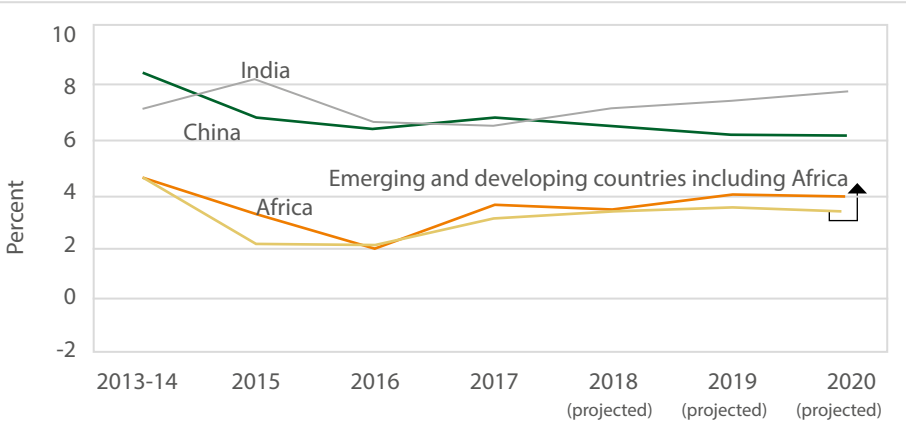


Figure 3: Manufacturing PMIs for select countries/region

4.1.2 African context

Last year's African Economic Outlook from the African Development Bank showed that the continent's general economic performance continues to improve. Gross domestic product reached an estimated 3.5% in 2018, about the same as in 2017 and up from 2.1% in 2016. Africa's GDP growth is projected to accelerate to 4.0% in 2019 and 4.1% in 2020 (Figure 4). This growth is not enough to address persistent fiscal and current account deficits and unsustainable debt. Dependency on a few export commodities to spur growth and vulnerability to volatility in commodity prices have impeded most African economies from sustaining high growth. Countries must move to a higher growth path and increase the efficiency of growth in generating decent jobs.



The 2019 Outlook shows that macroeconomic and employment outcomes are better when industry leads growth[4]. Key challenges faced by the African economy include:

- Unemployment and underemployment
- Underinvestment in infrastructure
- Fiscal crises
- Political change
- Climate change

Figure 4: Real GDP growth in Africa, 2020

4 *African Development Bank – 2019 African Economic Outlook*

4.1.3 South Africa

The South African economy finds itself under renewed pressure. Growth is estimated to have moderated in Q3 2019, based on preliminary data for several key economic variables. The output of the manufacturing and mining sectors has fallen, while retail trade sales are exhibiting modest growth. South African households remain under considerable strain, affected by high levels of indebtedness, an uncertain economic environment and poor employment prospects. Consumer confidence fell sharply to -7 points in Q3 2019, the lowest in nearly two years (Figures 5 and 6).

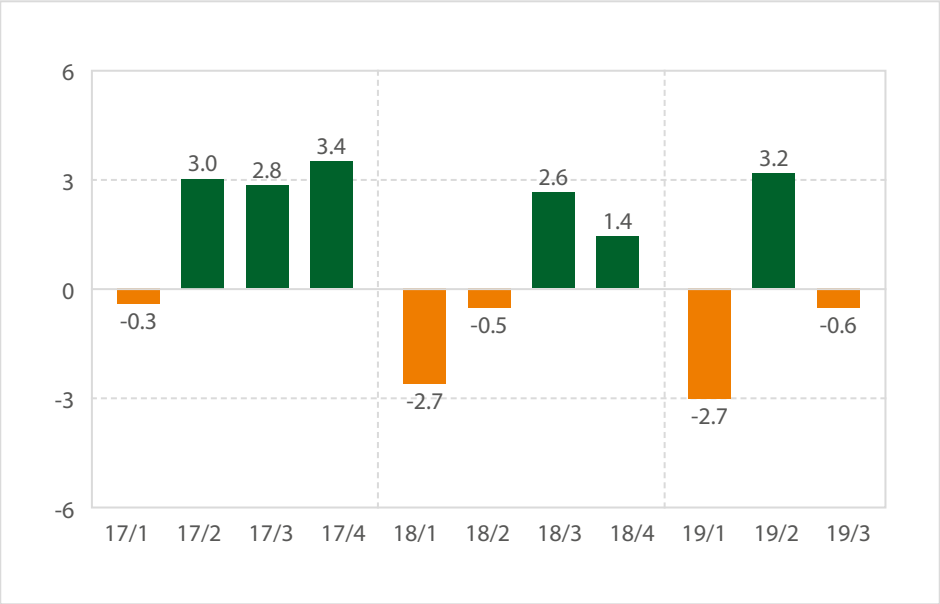


Figure 5: Contributors to negative growth in GDP in Q3[5]

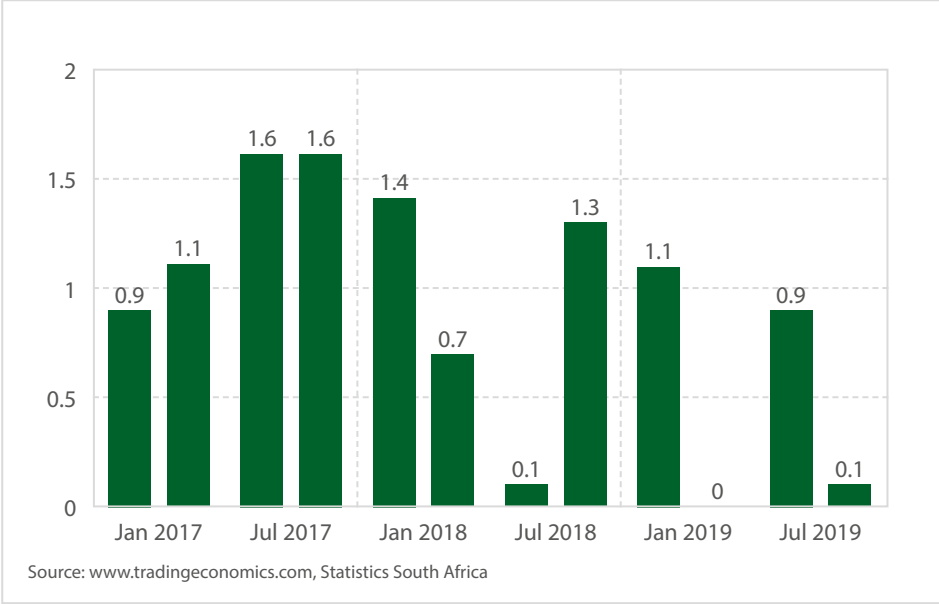
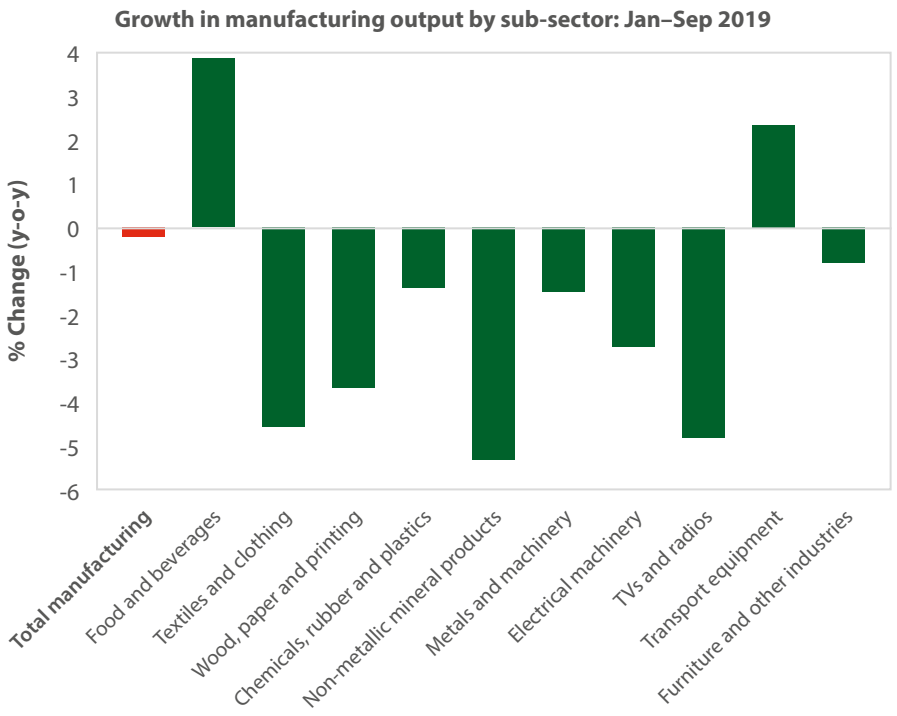


Figure 6: South Africa's annualised GDP growth in 2019

The drop in consumer sentiment was mirrored by a steep fall in confidence among retailers, to the weakest level in 20 years. Ratings agencies have become increasingly concerned with South Africa's worsening fiscal metrics and poor growth performance, as well as with enormous risks posed by Eskom. Although Moody's kept the sovereign rating unchanged at Baa3 on 1 November 2019, it altered the outlook from "stable" to "negative". The agency requires more clarity on how government plans to address the widening budget deficit and the steep rise in debt. S&P Global had already placed the sovereign rating two notches into sub-investment territory in November 2017 and issued a stark warning of a possible further downgrade at its ratings review meeting on 22 November 2019.[6]

5 *Statistics South Africa*

6 *IDC Economic Outlook 2019*

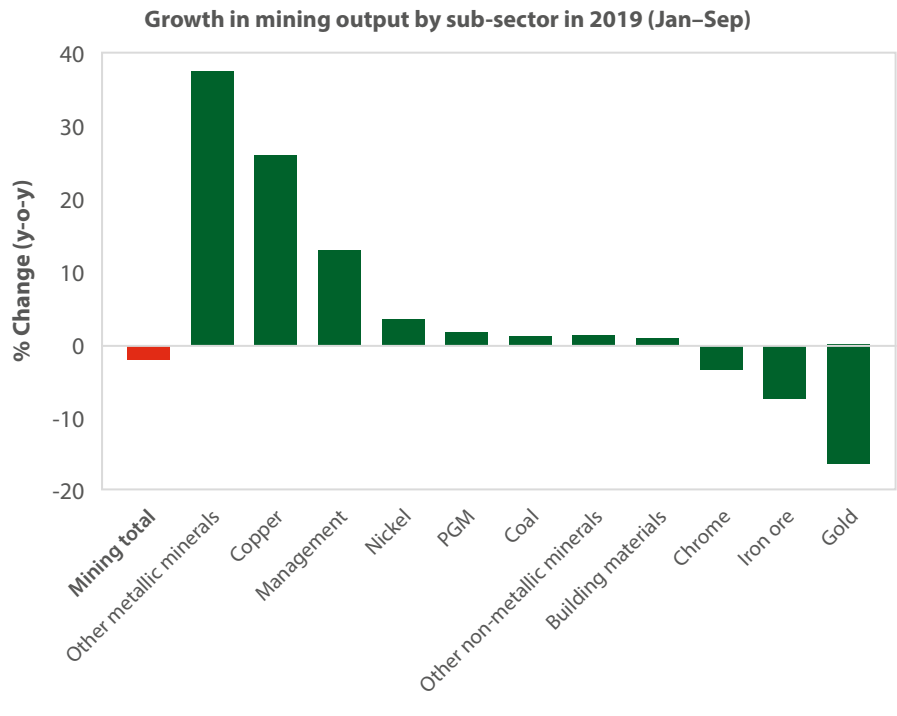


Source: IDC, compiled using Stats SA data

Lower output from mining and manufacturing indicates the difficult operating and trading conditions facing these two sectors of the economy. Weak demand conditions domestically and increasingly challenging global markets, accompanied by higher costs of doing business (particularly due to electricity tariffs, among others) and, policy-related concerns, have been affecting their production activity.

Manufacturing output dropped by 3.8% in Q3 2019 (saar), implying a contraction of 0.2% (year-on-year) for the period January to September 2019.

Figure 7: Lower output recorded by most manufacturing sub-sectors



Source: IDC, compiled using Statistics South Africa data

Mining production fell by 1.7% (year-on-year) over the period January to September 2019, mainly due to sharply lower output in sub-sectors such as gold and iron ore mining. Excluding gold, the mining sector's performance was slightly better at +0.5%. The poor performance of the mining sector has considerable implications for many supply and support industries across South Africa's economy.

Figure 8: Mining output

Operational challenges and financial constraints at Eskom, higher electricity tariffs and declining demand in a low-growth environment have affected the performance of the electricity sector. Key challenges facing the South African economy include:

- Insufficient employment creation
- Fiscal metrics worsened substantially
- Eskom remains the single-largest risk factor
- Sovereign ratings under considerable threat

The economic pressure on South Africa impairs the unemployment challenge as the economy is struggling to create enough employment. An estimated 519 000 people entering the labour market in the 12 months to Q3 2019, and 5 000 jobs having been lost on a year-on-year basis, the unemployment rate rose to a new record high of 29.1%, with 6.7 million people unable to find work.

South Africa's employment rate continues to drop, with Stats SA's latest figures showing the employment rate at 42.4%. The official employment rate has been on a steady decline in the last three years. The economy's labour absorption capacity is insufficient to accommodate all new entrants into the labour market.

The structural challenges and subdued demand conditions domestically, along with a slowing global economy, are expected to weigh on South Africa's economic performance in the short to medium term. The Real GDP is expected to increase by only 0.6% in 2019. The IDC view is that the pace of growth is likely to remain modest over the next three years. South Africa's worsening fiscal metrics and poor growth performance are of major concern going forward. The enormous risks posed by Eskom and widening budget deficit and the steep rise in debt has increased the risk for further downgrade from ratings agencies.

Rising state borrowing costs have the potential to impact key infrastructure investment and negatively impact both domestic primary and secondary economic sector output. However, improvement in business and investor confidence is emerging as evidenced by the commitments made by local and foreign entities at the second South Africa Investment Conference hosted by President Cyril Ramaphosa on 6 November 2019. Investment pledges of R371 billion were made, with potential to create 412 000 direct employment opportunities over the next five years in various economic sectors. The President reiterated government's commitment to address key structural impediments to growth, and to create a more investor- and business-friendly economic environment. A summary of performance is reflected in Figure 9.

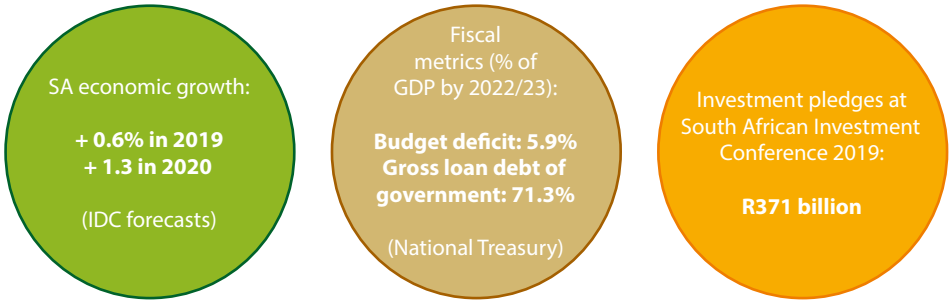


Figure 9: Summary of South Africa's economic overview [7]

4.2 Mining industry analysis

The mining and metals industry is recovering from one of its most difficult periods in decades. Market volatility and a downturn in commodity prices have created a new norm where cost cuts, automation and operational efficiencies are vitally important. The analysis examines the Global, African, Sub-Saharan/SADC and South African contexts, to provide a holistic picture of the challenges that are linked to the mining industry.

4.2.1 Global context

The World Economic Forum states that the mining industry has been facing a number of sector-specific issues related to regulation, geopolitical risk, legal limits on natural resource

7 *Source: IDC Economic Overview, November 2019*

use, shareholder activism and public scrutiny which has created additional challenges[8]. There are several trends that will determine which types of mining companies will prevail in the future. The World Economic Forum highlighted the following trends which would shape the mining and metals sector in future:

1. **Transition from a high to a low-carbon economy** – Countries must decarbonise their energy systems by the middle of this century. The transition from a fossil fuel-based energy system to low emission energy provides a great opportunity for the mining sector.
2. **Access to new resources** – Automation and digitalisation will result in more targeted and efficient mining, which could further be enhanced through technological breakthroughs in areas such as in-situ teaching. Mining jurisdictions with higher perceived risks may see increasing levels of interest from investors.
3. **New ways to finance mining** – As mining companies try to limit risk, novel financing and production models will become more common. Alternative financing solutions were developed such as royalty and metal stream agreements that reduce the burden on mining companies' balance sheets. To spread the risk of new capital-intensive projects, these financing solutions are likely to continue to grow.
4. **A social contract for mining** – Creating real benefits for communities near mine sites will be key for successful new projects. Obtaining the 'license to operate' from local communities has recently become challenging.
5. **Big data and mining** – Data transparency will aid the mining industry's relations with stakeholders. Collecting and processing massive amounts of data will be essential for mining companies as they digitalise and automate their operations.
6. **The geopolitics of mining** – Mining companies must navigate rising geopolitical risk and economic protectionism. Popular resistance to globalisation and free trade is growing and altering politics, and directly affecting the mining and metals sector. Policymakers in mining jurisdictions are increasingly trying to enact local content laws and regulations which require minerals to be processed before they are exported.

7. **Global exploration budget** – The global exploration budget for nonferrous metals rose to an estimated US$10.1 billion in 2018, representing 19% growth year-on-year compared with US$8.5 billion in 2017 (Figure 10). While data shows that global drilling has increased, budgets are still off levels at the peak of the super cycle and are not evenly spread across regions or minerals. S&P Global expects some volatility to persist in the exploration in 2019 as uncertainty remains over the sustainability of economic growth between the U.S. and China (Figure 11). The industry, however, remains short of critical new discoveries and metals such as copper will see widening deficits without additional investment in exploration for the mines of the future. As mentioned, transition to a low-carbon economy provides opportunities, for example, the solar industry will increase demand for aluminium, copper, lithium and cobalt multiple times in the next two decades due to the need for increased battery storage capability and capacity. Therefore, exploration activity and budgets will have to respond to this shift to enable supply to meet demand.

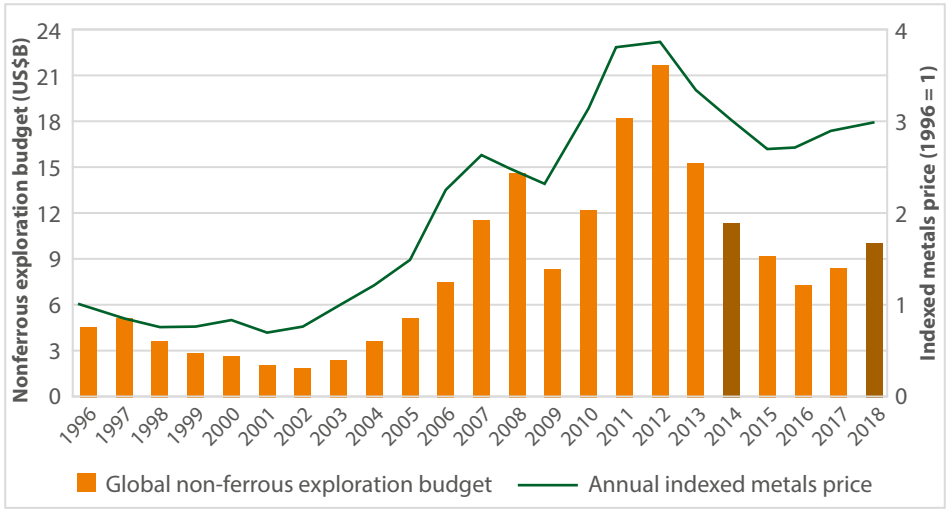
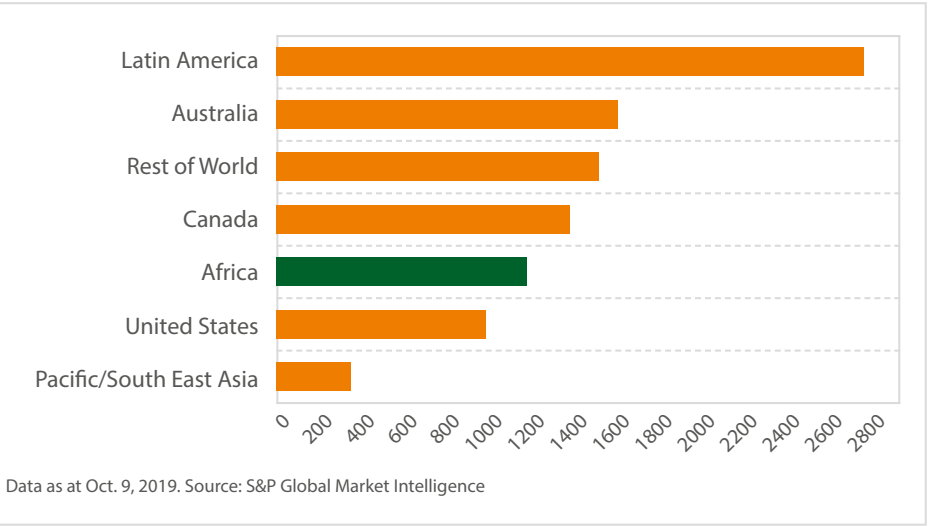


Figure 10: World exploration trends 2018 [9]

7 *Source: IDC Economic Overview, November 2019*

8 *https://www.weforum.org/agenda/2019/03/seven-trends-shaping-the-future-of-the-mining-and-metals-sector/*

9 *S&P Global Market Intelligence*



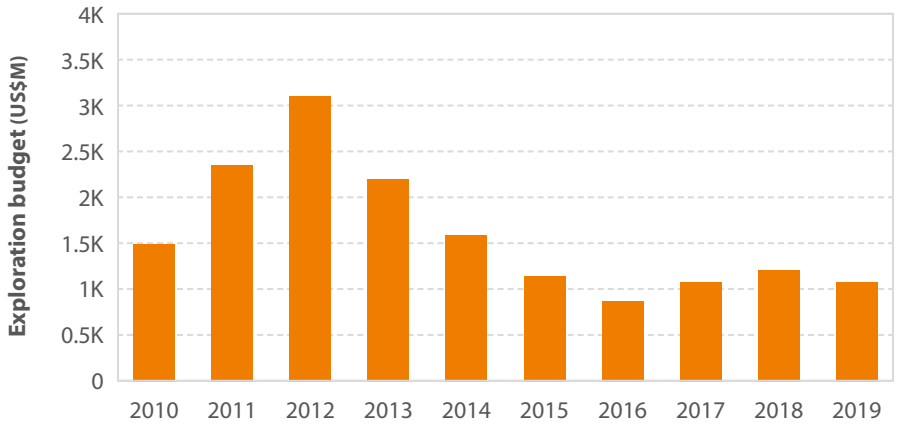
Data as at Oct. 9, 2019. Source: S&P Global Market Intelligence

Figure 11: 2019 Annual exploration budgets by region (US$M)

4.2.2 African context

As mining companies revamp their employee base, they will need to maintain open dialogue. Constantly evolving technologies and business models will require mining employees to develop new skills and competencies. The sector will have to increasingly compete with the IT sector to attract top talent from universities who will need to drive its digitalisation and automation processes[10].

4.2.2.1 Exploration in Africa



Data as at Oct. 9, 2019. Source: S&P Global Market Intelligence

According to the 2020 S&P Global Market Intelligence, "Africa posted the second-largest exploration budget decrease among the regions in 2019, as budget was cut by US$156 million year over year. The bulk of the budget reduction is in the allocations for late-stage and feasibility exploration, largely due to the progress of some major projects toward production"[11] .

Figure 12: Annual budget trends

9 *S&P Global Market Intelligence*

10 *https://www.projectsiq.co.za/mining-in-africa.htm*

11 *2020 by S&P Global Market Intelligence, a division of S&P Global Inc.*

4.2.3 South African context

South Africa has long been considered a regional and global mining powerhouse, with more than 90% of the platinum group metals (see below). South Africa has been engulfed by a series of political shocks and economic underperformance that have taken a significant toll on its position as Southern Africa's leader in the extractives industry. Amid a backdrop of recession and allegations of corruption, South Africa faces the challenges associated with an aging mining sector. Some concerns exist around the pace of transformation in the mining and minerals industry. Government has published a new Mining Charter aimed at strengthening its effectiveness, while considering the realities facing the industry[12]. However, the South African mining industry remains critical to the economy of the country as demonstrated by statistics from the Minerals Council South Africa in the table and Figure 13.

12 *Deloitte: 2018 Draft Mining Charter*

South Africa's contribution to world mineral resources: 2017–2018

Commodity	Unit	South Africa reserves	World reserves	%
Antimony (metal)	kt	27	1 500 000	1.8
Chromium	Mt	200 000	500 000	40.0
Gold (metal)	t	6 000	57 000	10.5
Iron Ore	Mt	770	82 000	0.9
Manganese (metal)	kt	200 000	690 000	28.9
Nickel	Mt	3 700	78 000	4.7
Platinum Group Metals	t	63 000	67 000	94.0
Uranium (metal, up to $US80/kg U)	t	279 100	–	5.2
Zirconium minerals (metals)	kt	14 000	75 000	18.6

Source: Department of Mineral Resources and Energy, US Geological Survey

Mining matters to South Africa

Direct contribution of mining to GDP	R350.8bn (7%)	Direct employment created by mining	456 000 people employed
Direct contribution to fixed investment	R91.1bn (15% of total private sector investment)	Indirect employment created by mining	For every job in mining at least 2 more jobs are created up and downstream
Total primary mineral sales	R498.7bn (66% exported sales, 27% of SA's total exports)	Economic dependency	Each mining employee supports 5-10 dependants
Royalties paid	R7.6bn	Remune-ration to mining employees	R134bn
Taxes paid	R22.0bn	PAYE paid by employees	R21.0bn

Figure 13: Contribution of mining to the South African economy

The mining sector fell by 1.7% (year-on-year) over the period. Lower output in sub-sectors such as gold and iron ore mining were the main contributors. The mining sector's poor performance has adverse implications along supply chains according to the IDC. Q4 2019 mining sector output is expected to remain negative due to load shedding and impact of iron and steel low capacity utilisation in Q4.

Mining companies do however accept that there is certain risk involved in the South African exploration and mining industry and accommodate this risk in their business decisions. According to the Mineral Council of South Africa, in 2017 South Africa accounted for 1% of total global exploration expenditure with 14% for Canada, 14% for Australia and 13% for the rest of Africa (Figure 11).

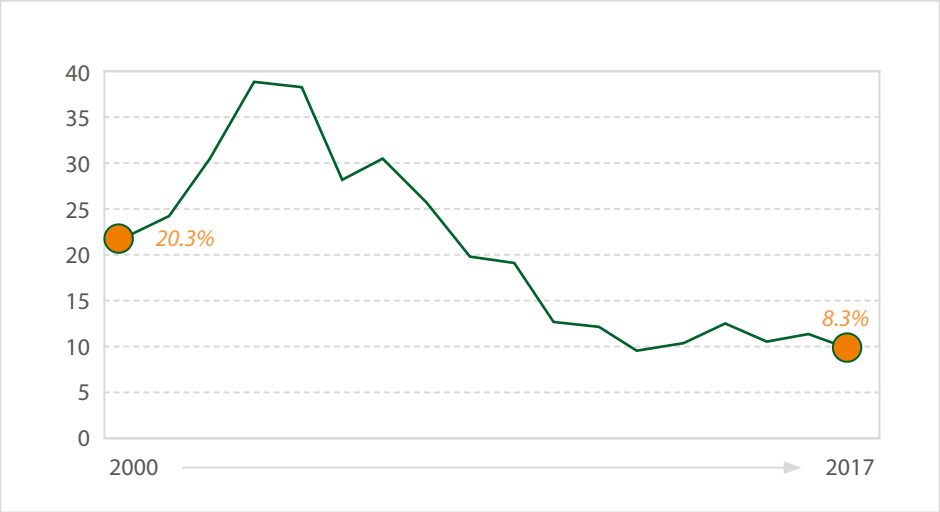
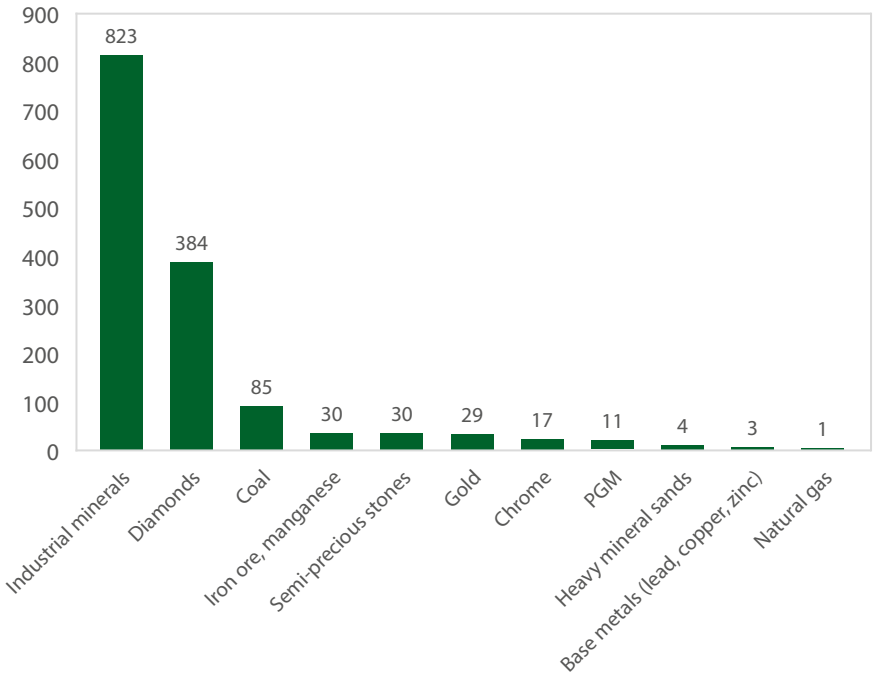


Figure 14: South Africa's share of African exploration budgets 2000–2017

Without a stable framework within which exploration and mining companies can obtain prospecting and mining rights and the related environmental authorisations, and exercise those rights within an environment (which gives a sense of security that the significant investments required will be protected and will, for the duration of the right be certain) investors are extremely cautious when making investment decisions. The various challenges being faced by the South African exploration and mining industry are generally summarised into eight key challenges, namely[13]:

- The global financial crisis and trade tensions and their impact on global demand
- Infrastructure, ports, rails, water, roads and electricity
- Labour uncertainty
- Health and safety
- Environmental compliance requirements
- Illegal mining operations
- Community activism

13 *https://www.miningreview.com/industry-insight/challenges-faced-by-the-south-african-exploration-and-mining-industry/*

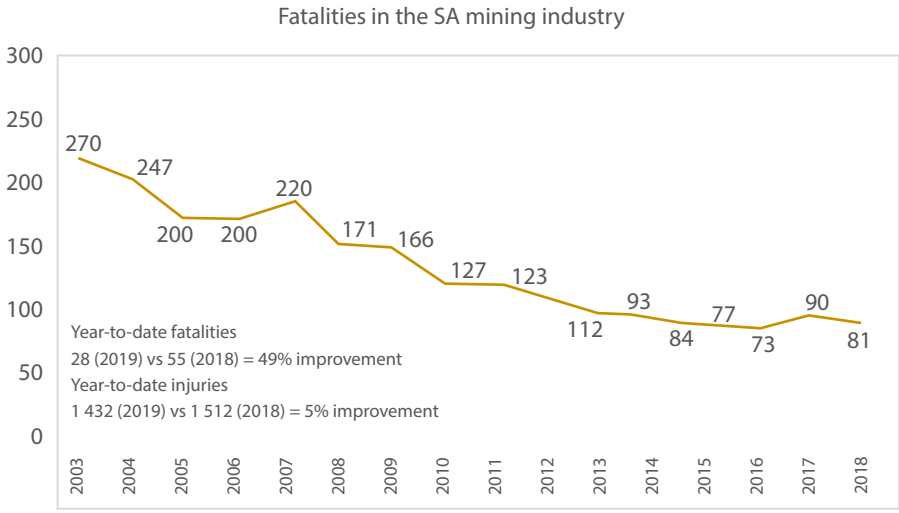


Source: DMR Statistics Tables 2017

The Minerals Council estimated that the junior mining sector could contribute 230 000 jobs. (Figure 15). The junior mining sector can significantly contribute to government's transformation goals and the black industrialist programme. Greater collaboration between the sector and government is required to give necessary support to junior mining companies. Regulatory environment needs to encourage the development of junior mining.

Figure 15: Junior miner licenses' in South Africa (2017)

Health and safety



The past ten years has seen significant improvements in health and safety for mine employees. This resulted in sustainable downward trends in occupational diseases, injuries and fatalities. As the Regulator of the sector, the implementation of the enforcement measures as contained in the Mine Health and Safety Act, 1996 (Act No. 29 of 1996) remains a key priority. There is concern about seismic activities in deep-level mines in South Africa that cause fall-of-ground leading to mining fatalities and injuries (Figure 16).

Figure 16: Mining industry health and safety performance

4.3 Energy industry analysis

Issues relating to energy are among the most important and difficult challenges confronting the world today. Providing enough energy to meet the requirements of a growing world population with rising living standards will require major advances in energy supply and efficiency[14]. Doing this while mitigating the risks of climate disruption will be an even more challenging undertaking. It requires a significant shift in the historic pattern of fossil-fuel use and a major transformation of the global energy system[15]. In developing countries, the choice of technology, policy, and economic levers that will be used to transform and expand their energy systems will have profound implications for their growth, international competitiveness, and economic security and prosperity[16].

4.3.1 Global context

According to the World Energy Outlook (2019), there is a gap between expectations of fast, renewables-driven energy transitions and the reality of today's energy systems in which reliance on fossil fuels remains stubbornly high. There is a gap between the calm in well supplied oil markets and the lingering unease over geopolitical tensions and uncertainties[17]. The five categories of challenges, as outlined by the World Energy Council (2019) are as follows:

1. Macroeconomic risks
2. Geopolitics
3. Business environment
4. Energy vision
5. Technology

14 *Muhanji, S., Muzhikyan, A. and Farid, A.M., 2019. Long-term challenges for future electricity markets with distributed energy resources. In Smart Grid Control (pp. 59-81). Springer, Cham.*

15 *http://blogs.worldbank.org/developmenttalk/the-global-energy-challenge*

16 *Kuzemko, C., Lawrence, A. and Watson, M., 2019. New directions in the international political economy of energy. Review of International Political Economy, 26(1), pp.1-24.*

17 *World Energy Outlook-2019*

World electricity generation by fuel, technology and scenario (TWh)

			Stated policies		Sustainable development		Change 2018–2040	
	2000	2018	2030	2040	2030	2040	STEPS	SDS
Coal	5 995	10 123	10 408	10 431	5 504	2 428	307	-7 695
Oil	1 207	808	622	490	355	197	-319	-611
Natural gas	2 760	6 118	7 529	8 899	7 043	5 584	2 781	-534
Nuclear	2 591	2 718	3 073	3 475	3 435	4 409	757	1 691
Hydro	2 613	4 203	5 255	6 098	5 685	6 934	1 895	2 731
Wind and solar PV	32	1 857	5 879	9 931	7 965	15 503	8 073	13 645
Other renewables	217	739	1 344	2 020	1 785	3 628	1 281	2 889
Total generation	**15 436**	**26 603**	**34 140**	**41 373**	**31 800**	**38 713**	**14 770**	**12 100**
Electricity demand	**13 152**	**23 031**	**29 939**	**36 453**	**28 090**	**34 562**	**13 422**	**11 531**

- *Global electricity generation grows by around 55% (14 800 terawatt-hours [TWh]) between 2018 and 2040 in the Stated Policies Scenario.*
- *Growth is led by Asia: China alone constitutes 33% of growth followed by India at 20% and other developing countries in Asia at 13%.*
- *Wind and solar photovoltaics (PV) provide over half of additional power generation to 2040 in the Stated Policies Scenario; coal provides just 2% although this varies widely by region.*
- *The Sustainable Development Scenario sees an even more dramatic transformation. Low carbon technologies provide almost 85% of generation in 2040; 40% of generation comes from wind and solar PV.*

Global Trends: Power Generation

- Electricity demand grows by 2.1% per year, resulting in over 13 000 terawatt-hours (TWh) more demand in 2040 than today (Figure 24).
- Falling costs and increasing competitiveness of solar PV push its installed capacity beyond all other technologies (IEA outlook to 2014).
- Developing economies account for almost 90% of demand growth; about 530 million people gain access to electricity around the world by 2040, mainly in Africa and developing Asia.
- Nuclear power share decreases, but its output nevertheless rises in absolute terms, with growth in China and more than twenty other countries.
- The share of fossil fuels in electricity supply falls below 50% in 2040. Coal remains the largest source of electricity, though its share of overall generation declines from 38% to 25%.
- Gas-fired generation grows steadily, maintaining roughly its current share of generation.

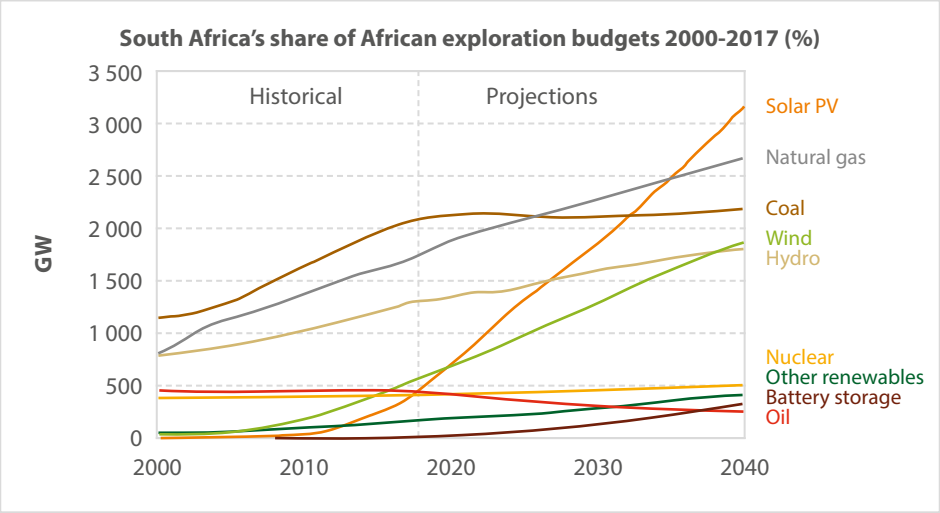


Figure 17: Global power capacity by source in the Stated Policies Scenario

Global Trends: Oil and Gas

- In the Stated Policies Scenario, China soon overtakes the European Union and cements its position as the world's largest net oil importer.
- India's net oil import requirements more than double between 2018 and 2040 and its level of import dependency reaches roughly 90%, one of the world's highest.
- The United States becomes a net oil exporter soon after 2020, thanks to the shale boom. However, the United States remains a major importer of oil given the configuration of its refineries.
- China overtook Japan to become largest gas-importing country in 2018. In the Stated Policies Scenario, its imports reach the level of those of the European Union by 2040.
- China's net imports of coal peak in the next few years and decline substantially towards 2040. China is overtaken by India as the world's largest coal importer in the mid-2020s (see following Table).

Net import (Shaded) and export shares by fuel, Region and Scenario (%).

	Oil			Natural gas			Coal			Total		
		2040			2040			2040			2040	
	2018	STEPS	SDS	2018	STEPS	SDS	2018	STEPS	SDS	2018	STEPS	SDS
North America	**1**	**30**	**43**	**3**	**10**	**12**	**15**	**13**	**31**	**4**	**15**	**11**
United States	20	17	39	2	13	14	14	10	17	3	10	7
C & S America	**11**	**30**	**11**	**5**	**10**	**11**	**44**	**20**	**51**	**21**	**24**	**18**
Brazil	16	42	27	29	23	17	90	89	99	18	30	26
Europe	**76**	**76**	**70**	**55**	**67**	**61**	**49**	**61**	**72**	**42**	**40**	**34**
European Union	87	91	89	76	90	85	49	66	72	50	47	39
Africa	**49**	**8**	**15**	**33**	**37**	**47**	**29**	**27**	**25**	**45**	**33**	**50**
Middle East	**77**	**70**	**73**	**20**	**21**	**23**	**74**	**88**	**76**	**61**	**51**	**47**
Eurasia	**71**	**64**	**55**	**34**	**40**	**39**	**45**	**53**	**42**	**49**	**47**	**34**
Asia Pacific	**78**	**86**	**87**	**26**	**43**	**42**	**1**	**5**	**2**	**17**	**27**	**30**
China	70	83	85	43	57	57	6	3	0	18	27	34
India	83	92	92	49	59	74	29	27	38	18	35	38
Japan	100	99	99	74	98	97	99	100	100	87	67	55
World	**45**	**44**	**45**	**20**	**24**	**26**	**21**	**20**	**20**	**25**	**24**	**21**

Global energy trends: Renewables

By 2018, most countries globally had some form of renewable energy targets in place, with more than 150 countries setting renewable energy targets. In addition, 45 countries had policies in place to support the use of biofuels. China's National Energy Administration raised the country's renewable portfolio standard (RPS) in 2019 to 35% of electricity consumption by 2030. The European Union's revised Renewables Energy Directive (2018/2001) established a new binding 2030 renewable energy target of at least 32%. For the United States, the increase in renewable capacity in 2018 is as a result of onshore wind expansion. Elsewhere, renewable capacity expansion accelerated in countries in the Middle East, North Africa and parts of Asia, reflecting declining wind and solar PV costs, strong policy support and commitments made under the Paris Agreement (IEA, 2019c).

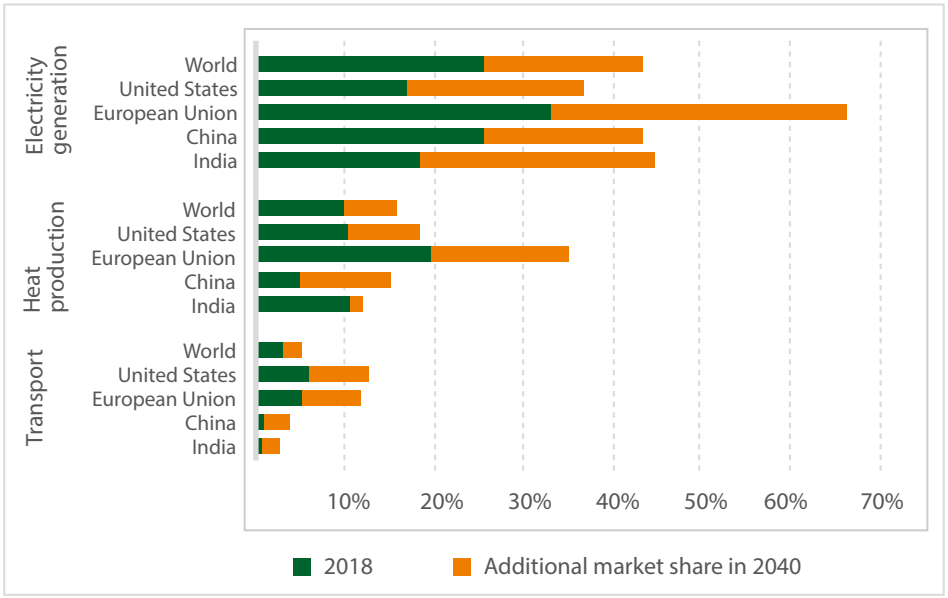


Figure 18: Renewable energy – total primary energy demand by category and region

Global energy trends: Nuclear

- Nuclear reactors generated a total of 2 563 TWh of electricity in 2018, up from 2 502 TWh in 2017. This is the sixth consecutive year that nuclear generation has risen.
- In 2018 the peak total net capacity of nuclear power in operation reached 402 GWe, up from 394 GWe in 2017. The end of year capacity for 2018 was 397 GWe, up from 393 GWe in 2017.
- Improved operational performance saw the USA's nuclear sector supply a record 808 TWh of clean, low-carbon electricity in 2018.

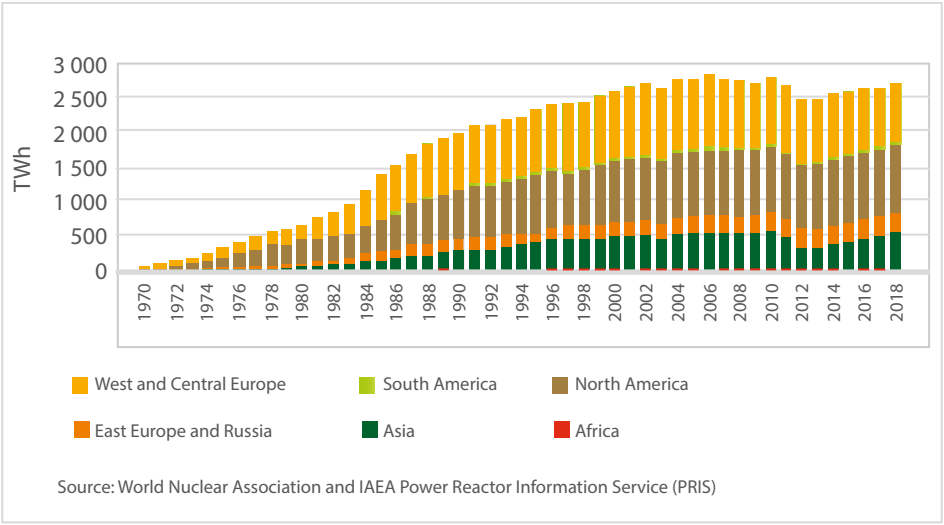


Figure 19: Nuclear energy production across the globe

4.3.2 African Context

The African continent becomes increasingly influential in shaping global energy trends, due to the growing urban populations, and energy demand (Figure 4). According to Africa Energy Outlook (2019) there is a rapid growth in energy demand for industrial production, cooling and mobility[18]. Energy demand in Africa grows twice as fast as the global average. With the growing appetite for modern and efficient energy sources, Africa emerges as a major force in global oil and gas markets[19]. A critical task for policy makers is to address the persistent lack of access to electricity, and unreliability of electricity supply.

These challenges negatively impact the continent's development. An estimated 80% of sub-Saharan African companies suffered frequent electricity disruptions leading to economic losses. Rising electricity needs, especially in sub-Saharan Africa, require a major expansion of the power system. Africa has the richest solar resources in the world but has installed only 5 gigawatts (GW) of solar PV, less than 1% of the global installed capacity[20]. Key energy challenges in Africa are:

- Governance and policy frameworks
- Infrastructure and investment
- Demographics and urbanisation
- Economic growth and industrialisation
- Affordability of energy prices and fossil fuel subsidies

Energy sector trends

- +127% growth in African energy consumption
- 6% Share of global energy consumption in 2040
- +54% growth in African energy production
- 7% share of global energy production in 2040

- The share of renewables in the African fuel mix grows from 1% today to 16% by 2040
- Electricity demand increases with renewables becoming the largest source of power generation by 2040
- African energy production as a share of consumption declines from 176% in 2017 to 119% by 2040 (see Figure 20).

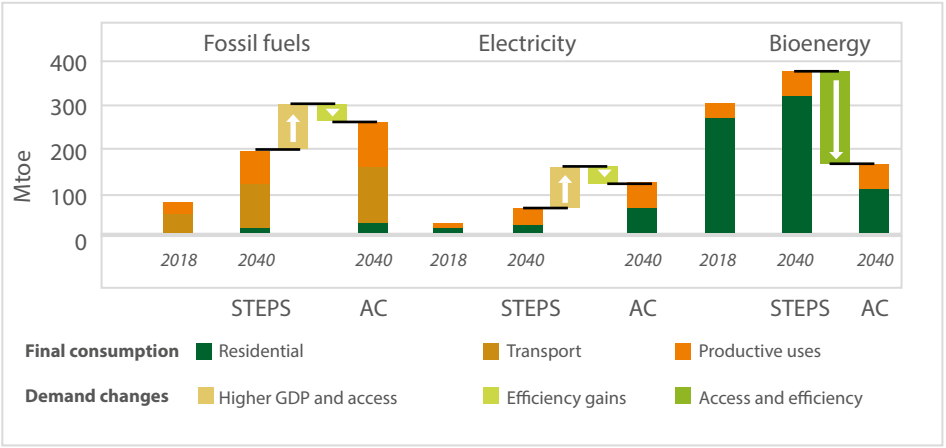


Figure 20: Final consumption by fuel, sector SSA (excl. SA)

Developing countries, led by Asia, are the main engines of global growth, with India where demand doubles, being the single largest source of demand growth. China remains the world's largest energy consumer. In this scenario energy demand rises rapidly in the Middle East, where per capita consumption is already high currently, spurred in part by increased demand for cooling and desalination (Figure 21). Rising incomes and population growth underpin strong growth in Africa.

18 *Africa Energy Outlook 2019*
19 *https://www.iea.org/reports/africa-energy-outlook-2019*
20 *https://www.iea.org/reports/africa-energy-outlook-2019*

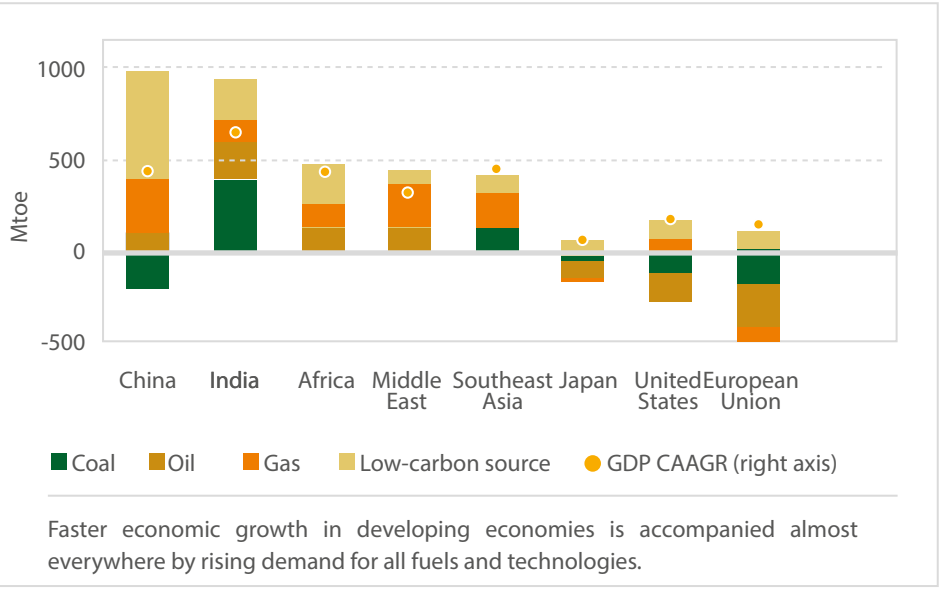
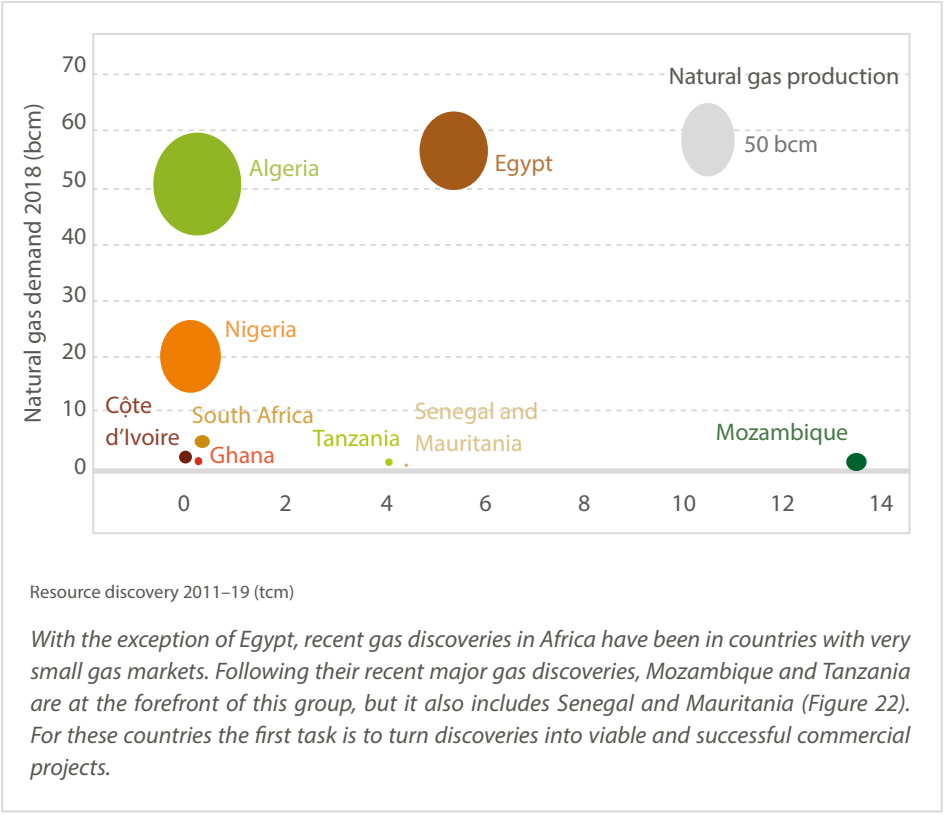


Figure 21: Change in energy demand and average annual GDP growth rate by region in the Stated Policies Scenario, 2018-2040

African oil and gas trends



With the exception of Egypt, recent gas discoveries in Africa have been in countries with very small gas markets. Following their recent major gas discoveries, Mozambique and Tanzania are at the forefront of this group, but it also includes Senegal and Mauritania (Figure 22). For these countries the first task is to turn discoveries into viable and successful commercial projects.

Figure 22: Natural gas resource discoveries, demand and production in selected countries in Africa

4.3.3 South Africa

Coal is South Africa's key energy source, representing over 90% of electricity generation. A portion of coal goes to the Coal to Liquid (CTL) industry to supply liquid fuels. The country's liquid fuel needs are met by imports of crude oil for local refining capacity and imports of oil-based fuels. Natural gas is very limited in the energy mix with PetroSA's gas deposit used to produce liquid fuels for the country via its Gas to Liquid (GTL) plant. The other gas source is imports from Mozambique and LNG imports. The Independent Power Producer Programme (IPPP) is responsible for the country's renewable energy source, with nuclear energy coming from Koeberg in the Western Cape (Figure 23).

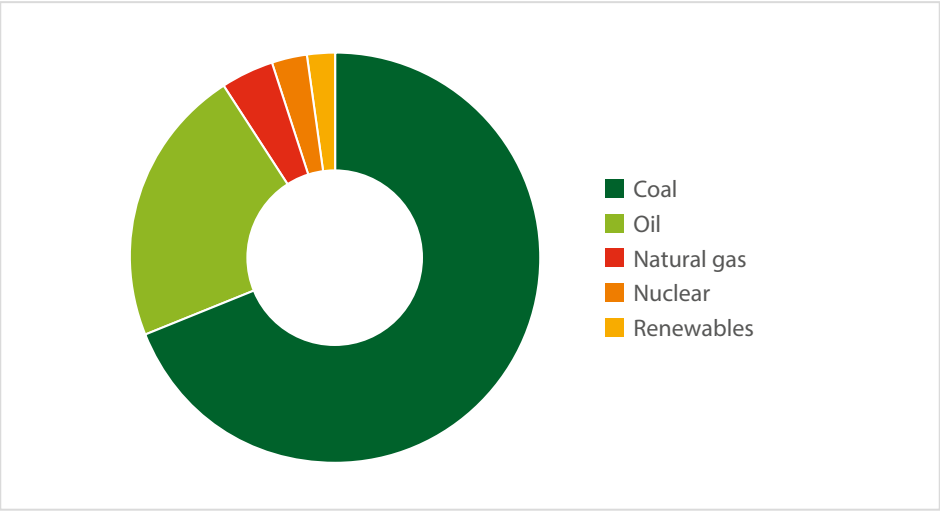


Figure 23: South African primary energy mix

4.4 External environmental analysis

Environmental change is fundamentally driven by both population dynamics and economic development, and associated human activities such as agriculture, energy consumption and mining amongst others exert pressure on the Earth[21]. It is important to understand the relationship between the drivers and pressures that impact the environment. Environmental changes bring complex challenges that threaten multiple sectors of the economy, human livelihood and the integrity of natural capital. It is important to be aware of the problems associated with these changes such as the scale and frequency of natural disasters, warming and cooling periods, different types of weather patterns, etc.[22]. All stakeholders must be aware of the types of environmental problems the planet faces, the implications for the economy and potential mitigation measures. The analysis examines the Global, African, sub-Saharan/SADC and South African contexts, to provide a holistic view of challenges linked to the natural environment.

4.4.1 Global context

Globally, environmental risks continue to dominate, according to the annual Global Risks Perception Survey (GRPS) undertaken by the World Economic Forum. Currently (2020) these risks account for three of the top five risks by likelihood and four by impact. Globally, people are much more concerned about "extreme weather" as a risk. Survey respondents are largely concerned with environmental policy failure. The ability to minimise our carbon footprint is becoming a major concern especially because of the number of extreme weather incidences such as severe draughts and flooding. The top three environmental risks are listed below[23]:

1. **Climate Change/Global warming** – Global warming leads to rising temperatures of the oceans and the Earth's surface causing melting of polar ice caps, rising sea

21 *Scoville-Simonds, M., Jamali, H. and Hufty, M., 2020. The Hazards of Mainstreaming: Climate change adaptation politics in three dimensions. World Development, 125, p.104683.*

22 *Lo, A.Y., Liu, S., Cheung, L.T. and Chan, F.K., 2020. Contested Transformations: Sustainable Economic Development and Capacity for Adapting to Climate Change. Annals of the American Association of Geographers, 110(1), pp.223-241.*

23 *World Economic Forum- Global Risks Report 2020*

levels and unnatural patterns of precipitation such as flash floods, excessive snow or desertification.

2. **Pollution** – Air, water and soil pollution require millions of years to recuperate. Industry and motor vehicle exhaust fumes are the main pollutants. Heavy metals, nitrates and plastic are toxins responsible for pollution.
3. **Biodiversity loss** – Climate change is intensifying biodiversity loss and the causality goes both ways where many oceans and forests are important for absorbing carbon emissions. Increasingly, fragile ecosystems create risks to societal and economic stability. For example, 200 million people depend on coastal mangrove ecosystems to protect their livelihoods and food security, these are vulnerable because of storm surges and rising sea levels.

The above-listed challenges are amongst the leading environmental challenges that are linked to the mining and energy sectors globally and locally. The world is very far from the emissions reductions necessary to achieve the goals of the Paris Agreement. Efficiency gains and deployment of cleaner energy sources have not kept pace with rising energy demand according to the IEA Global Energy Report.

4.4.2 African context

The African continent has a growing population, rich natural capital and weak institutions. As a result the continent suffers from some serious environmental challenges, including climate change, deforestation, water pollution, coal mining, nuclear waste, overfishing and industrial agriculture etc.[24] Africa faces significant challenges with regards to access to electricity and clean cooking for all, leading to unsustainable harvesting of fuelwood. A transition away from the inefficient combustion of biomass for cooking on the continent needs to be achieved. In 2015, the Heads of State and Governments of the African Union adopted Agenda 2063. It sets out a vision for "an integrated, prosperous and peaceful Africa, driven by its own citizens and representing a dynamic force in the international arena" and is closely linked to the United Nations Sustainable Development Goals.

African governments face several challenges in implementing environmental protection mechanisms. Africa's development challenges are rooted in past policies and strategies. Heavy dependence on natural resources led to resource depletion and environmental degradation and worsened the exposure of weaker economies to external shocks, thereby increasing poverty and reversing social development[25]. It has to be stated though, that Africa has been a minor contributor to global greenhouse gas emissions, and this remains the case to date. According to the IEA energy-related carbon dioxide (CO_2) emissions in Africa represented around 2% of cumulative global emissions. But Africa is in the front line when it comes to the effects of a changing climate. Africa's ecosystems already suffer disproportionately from climate change and the associated risks to food, health and economic security. All African countries agreed to the Paris Agreement and, through their Nationally Determined Contributions (NDCs), they committed to contribute to the global effort to mitigate GHG emissions (IPCC, 2019).

4.4.3 South Africa

The South African economy depends greatly on the growth and development of its extractive mining sector. As mentioned, currently an estimated 93% of South Africa's electricity comes from coal. South Africa is a water scarce country, yet every step in the chain of using coal to produce electricity pollutes and consumes vast amounts of water. Together with coal mining, burning coal for electricity generation has several serious implications for both water quantity and quality. The over-reliance on coal contributes enormously towards greenhouse emissions. The mining industry plays a vital role in South Africa's growth and development. But if mining is not strategically planned and carefully implemented, it has significant negative impact on biodiversity and ecosystems, on the catchments, rivers and wetlands that deliver water-related services to people.

24 *Nalule, V.R., 2020. Mining and the Law in Africa: Exploring the social and environmental impacts. Springer Nature.*

25 *Simon, C.A., 2020. Alternative energy: political, economic, and social feasibility. Rowman & Littlefield Publishers.*

4.5 Internal environment analysis

4.5.1 Organisational structure

The Department of Mineral Resources and Energy (DMRE) was established in May 2019 when the Department of Mineral Resources and the Department of Energy merged. The intention was to better equip and capacitate the DMRE to respond to the strategic objectives derived from the NDP, as they relate to the regulation and transformation of the energy and mining sectors in the following regard:

- Provisioning of secure, sustainable and affordable energy
- The promotion and regulation of minerals and mining

These objectives are aligned to develop a mineral resources and energy sector that promotes economic growth and development, social equity and environmental sustainability.

Furthermore, the intention was to align the integrated mandate of the DMRE with the strategic priorities identified in the MTSF. The structure is depicted in Figure 24.

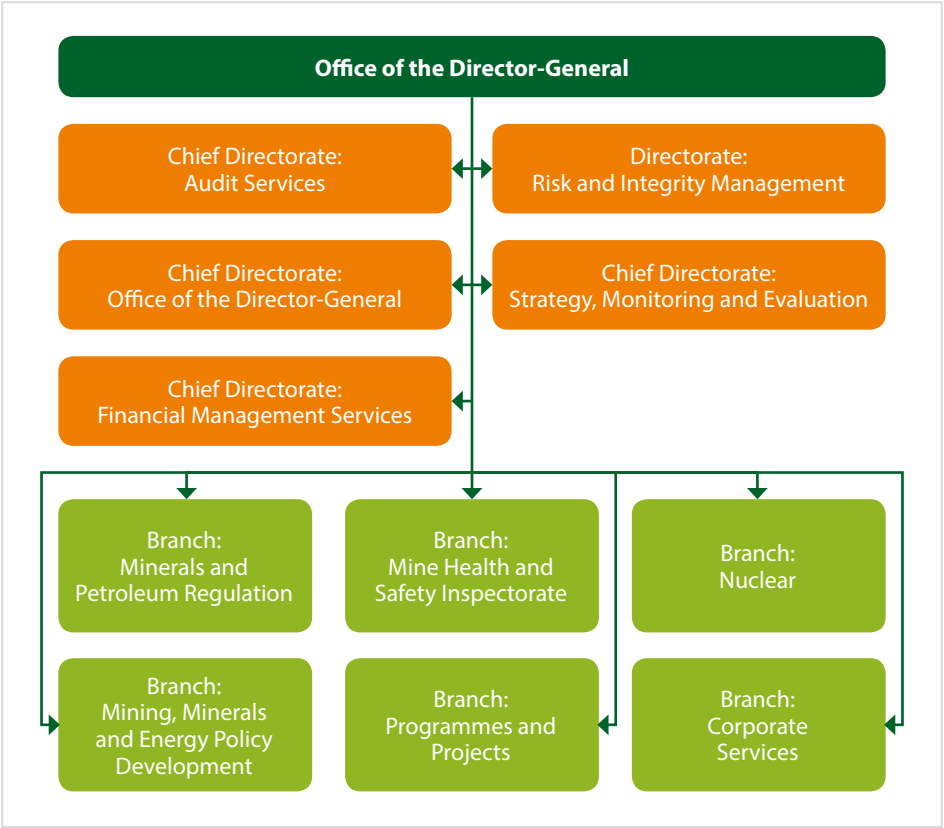


Figure 24: DMRE organisational structure

The purpose of the realigned structure of the DMRE is to ensure the optimal utilisation and safe exploitation of mineral and energy resources through the execution of the following functions:

- Regulate the petroleum, mining and minerals industry
- Formulate, maintain and implement integrated Minerals and Energy policies to promote and encourage investment into the mining and energy industry
- Ensure the health and safety of employees in the mines
- Manage, co-ordinate and monitor programmes and projects focused on access to minerals and energy resources
- Manage and regulate the nuclear industry to promote nuclear energy as an important electricity supply option through the establishment of a national industrial capability for the design, manufacture and construction of nuclear energy systems
- Ensure the Corporate Services function is performed
- Provide internal audit services
- Ensure the implementation of risk and integrity management strategies and compliance with Acts and policies
- Co-ordinate the development of strategic management, monitoring and evaluation services
- Ensure sound financial management

The realignment of the structure has, among others, ensured that previous challenges relating to reporting and lines of accountability are suitably addressed. The approved organisational structure was implemented in a phased approach due to financial constraints within the DMRE's MTEF allocations. As a result, the DMRE has continued to explore and embark on various interventions to improve the efficiency and effectiveness of the organisation within the baseline allocations and has creatively and innovatively implemented key aspects of an approved Integrated Human Resources Plan which will improve its human resources (HR) capacity and capabilities.

The following table summarises the six departmental programmes and overall structure of the organisation, respectively.

Programme	Programme purpose
Administration	Provide strategic support and management services to the Ministry and the DMRE
Minerals and Petroleum Regulation	Regulate the mining, minerals and petroleum industry
Mining, Mineral and Energy Policy Development	Provide policy and legislative frameworks for mining, minerals and energy sectors
Mine Health and Safety Inspectorate	Ensure health and safety of employees in the mines
Programme and Projects Management	Manage, coordinate and monitor programmes and projects focused on access to mineral and energy resources
Nuclear Energy	Manage the South African nuclear energy industry and control nuclear material in terms of international obligations, nuclear legislation and policies to ensure the peaceful use of nuclear energy

4.5.1.1 DMRE performance overview

4.5.1.1.1 Minerals and Petroleum Regulation Branch

The DMRE, through the Minerals and Petroleum Regulation Branch, will continue to improve service delivery in the adjudication of licences and permits, in line with the Mineral and Petroleum Resources Development Act (MPRDA) and Petroleum Products Amendment Act (PPA).

Most targets relating to the branch were achieved, except for the number of jobs created through mining. This is due to the mining sector's performance. The target of adherence to

prescribed turnaround times was not met. This resulted from misalignments between the MPRDA and NEMA, in terms of number of days defined in both pieces of legislation.

Sixty percent of the petroleum annual targets were achieved. During the year, the branch implemented or completed several projects, including the Social and Labour Plan (SLP) development projects across the country. The DMRE's regulatory activities saw the implementation of an additional 108 SLP development projects.

Engagements with communities continue in the branch's endeavours to create stability within the mining industry. The conflicts between communities living in mining areas are symptomatic of communication limitations that exist between all concerned.

The DMRE has since established the directorate *Mine Communities and Stakeholder Engagement* to enhance and improve collaborations between mines, communities and other government institutions. In addition, the branch finalised a stakeholder engagement framework to assist companies in managing their stakeholder relations, especially in communities where they are mining.

The planned target for fuel samples (1 080) was fully achieved. The branch conducted a total of 1 590 compliance inspections on retail sites, which exceeded the target by 90 compliance inspections.

There were delays in the completion of sector codes and a petroleum sector retail audit, due to insufficient data. Of the licences issued to entities, 89.18% contained at least 50% ownership and control by historically disadvantaged South Africans (HDSA).

Enforcement and Compliance: The Illegal mining and illicit petroleum trades continue to be challenges, depriving South Africans of their benefits and impacting negatively on the growth of the country. The branch continues to work closely with the relevant stakeholders, including law enforcement agencies, to stem these trades. This process will raise compliance levels in all aspects of regulation.

Special presidential package: The branch will continue with the revitalisation of mining towns and labour-sending areas, including a government programme aimed at reviving mining towns. A revised plan for improving mining towns requires partnerships between government and mining companies, which must focus on the delivery of human settlements, and better alignment of SLPs with the Integrated Development Plans (IDP) of municipalities. Collaborative efforts with mining companies and municipalities can improve the lives of communities.

4.5.1.1.2 Mining, Minerals and Energy Policy Development Branch

The President's investment drive, with a target of R1,2 trillion, is beginning to bear fruit, however, there has been a lack of investment in infrastructure and exploration activities, in both the mining and petroleum sectors. To alleviate pressure on the fiscus and stimulate economic growth and development, government needs to utilise the private sector for infrastructure development.

The mining and energy regulatory outlook has improved following the finalisation of the Mining Charter and the withdrawal of the MPRD Bill from Parliament. This has provided much-needed policy certainty to the mining industry. The promulgation of the Integrated Resource Plan (IRP) has been well received by stakeholders. The regulatory framework for the DMRE continues to be strengthened with current work on amending both the energy and mineral legislative instruments.

Transformation and mineral beneficiation are not at the desired nor expected levels. South Africa continues to export minerals and beneficiation remains at a minimum. There exists an opportunity to develop internal value chains for better economic benefits. This can help mitigate a serious challenge where the economy has been shedding jobs. Unemployment must be curbed as it is intensifying the unacceptable practice of illegal mining.

The energy availability factor is a clear and present challenge. Eskom remains the sole provider of electricity and prices are relatively high in terms of affordability. Load shedding presents a challenge with regards to reliability and security of supply. These factors are

crippling the economy. Unmaintained distribution assets, the operation and maintenance of Eskom, and the reliability of power stations are another concern, but the clarification and review of the Electricity Pricing Policy (EPP) will provide direction for Eskom and the National Energy Regulator of South Africa (NERSA).

The energy industry's transition from coal to low carbon energy technologies will negatively affect the coal industry soon. That is, unless technology is developed to mine coal in an environmentally friendly manner, offsetting the negative emission from its production. Renewable energy provides both opportunities and threats to the mining industry. Other than its threat to the coal industry, the emergence of electric vehicles will reduce demand for platinum, which is used for catalytic convertors in combustion engines.

The demand for battery minerals such as lithium, cobalt, platinum, vanadium and copper are opportunities. The manufactured batteries will power greener economies and transportation, presenting unparalleled opportunities for both local and international investors in the platinum and battery mineral commodities. These opportunities must be managed to ensure the sustainability of the mining industry. It is key to move from a raw export economy to a processing economy.

Gas is another source of available energy, but there are no readily available gas resources or infrastructure. A review of the Gas Act is needed for inclusion of new technology and new modes for transportation. Furthermore, there is a need to strengthen bilateral engagements with SADC countries that are endowed with gas, such as Mozambique and Tanzania.

4.5.1.1.3 Mine Health and Safety Inspectorate (MHSI)

Mining disasters have decreased over the past decade. A mining disaster is an incident where five or more people have died. A downward trend is also reflected in the total number of occupational diseases and the overall fatality frequency rate, though platinum-related fatalities are up from a low in 2016.

South Africa has improved its safety level when compared to its international peers, including Canada and the USA. South Africa's fatality rates improved by 75%, while Australia improved by 67% and the USA by 50%. Canada achieved 100%. These markets have considerably less-complicated mining sectors than South Africa, which has some of the world's deepest mines.

South Africa's coal fatality rate improved by 78%, and mining disasters reported by the sector have dropped from 2018. Though platinum recorded a 67% jump in fatalities (from 12 to 20), gold (-55%), coal (-22%) and other mining activities (-37%) all reduced their fatalities. There is great concern over the safety of women in the industry as more women have entered mining. Injuries - which include security issues - are up sharply to 187 in 2018 from 58 in 2010.

The inspectorate has been looking at practices in markets such as Australia and the United States since it aims to achieve a zero-harm goal.

4.5.1.1.4 Programmes and Projects Branch

Integrated National Electrification Programme (INEP): The DMRE, through the Integrated National Electrification Programme (INEP), continues to fund the electrification of previously disadvantaged and farm dweller households. StatsSA has identified 2.2 million South African households as being without electricity. The majority of these are in KwaZulu-Natal and the Eastern Cape. Most households to be electrified are in deep rural areas within 44 priority districts. There is a need to build more bulk infrastructure in these areas to effect household connections. Where households are far from the national grid, these households will continue to be connected using solar home system technologies.

The electrification programme is playing an important role in three of the seven key priority areas of government, which include infrastructure development; speeding up economic growth; and transforming the economy to create decent work and sustainable livelihoods.

The INEP in partnership with implementing agencies (municipalities and Eskom), has made remarkable progress in increasing access to electricity in South Africa. Access to electricity

in 1994 was less than 35%. Since 1994, INEP has made it possible to electrify over 7.6 million households through grid technology and over 170 000 installations of solar home systems (non-grid technology) as at the end of March 2019.

In the last Medium-Term Strategic Framework (2014–2019) the programme achieved 1 285 178 grid connections and over 85 993 non-grid connections against a target of 1 250 000 and 105 000 respectively. In the coming MTSF the DMRE has a target of 1 000 000 households to be electrified with grid and 75 000 households using solar home system technology.

Lack of skills and resources in municipalities' technical departments to plan and manage large electrification projects remains a challenge that INEP is facing. In the year 2020/21 the DMRE will continue to work closely with the Municipal Infrastructure Support Agent (MISA) to make sure that municipalities are capacitated and able to roll out electrification projects. Integrated planning with the Department of Human Settlements will also improve collaborative planning as part of the District Model Approach (DMA) announced by the President.

4.5.1.1.5 Nuclear Branch

Nuclear in Africa: According to data from the International Atomic Energy Agency (IAEA), global energy produced by nuclear stands at 396 GW, but only 2 GW is produced in Africa, all of it in South Africa. Egypt is developing 5 GW capacity and there are projects of unreported sizes in Kenya, Ghana and Nigeria. By 2050, global supply from nuclear could be as high as 750 GW, of which Africa could contribute 15 GW.

Nuclear and Greenhouse gasses: Nuclear is rated as a clean energy and part of reducing greenhouse emissions. The International Panel on Climate Change (IPCC) reports that in terms of grams of CO_2 per kWh, nuclear only produces 12 - lower than coal (820), natural gas (490), solar (27) or hydropower (24).

Nuclear can help meet COP 21 (Paris Agreement on Climate Change) requirements. France is operating 58 Nuclear Power Plants (NPPs) and is already in compliance with the Paris Agreement. An increased share of nuclear in the energy mix will reduce carbon emissions significantly.

Small Modular Reactors: There is a move towards developing Small Modular Reactors (SMRs). Unlike traditional nuclear plants of 1 000 MW+, SMRs are less than 300 MW and can be shop-manufactured for site assembly. They can be combined in one plant (>6 units) to give higher power in a modular manner and offer a lower plant capital investment cost per unit. SMRs are flexible, both in deployment and load following, which is suited for remote deployment in Africa. They also have lower grid requirements, which are better suited for African countries with small grids.

Currently there are more than 50 SMR designs under development, yet only three are being realised. Argentina's 25 MW CAREM, an integral light water reactor, is 70% constructed. China's 210 MW HTR-PM, a high temperature gas cooled reactor, is in the commissioning stage, and Russia's 70 MW KLT40s, a floating reactor, is being tested and towed. South Africa was once a world leader in SMR - namely the Pebble Bed Modular Reactor (PBMR) or Advanced High-Temperature Reactor (AHTR). Best case delivery of SMRs (Vendor Promise) is 2025. Expected delivery for commercial availability of SMRs is post-2030.

Research Reactors: Research Reactors (RRs) are used for science, engineering, medicine, palaeontology, and numerous other applications. South Africa has the SAFARI-1 Research Reactor, placing it among the largest producers of radioisotopes in the world, including the Netherlands, Belgium, Poland, and Australia.

South Africa has a strategic capability in the field of Research Reactor Isotope Production and Nuclear Medicine (Steve Biko Academic Hospital). At least ten other countries are considering new RRs; both Zambia and Nigeria already have firm plans for new RRs.

The demand for radioisotopes and other applications is increasing. Demand currently outstrips supply, which RRs can respond to. RRs are essential building blocks for a nuclear sector, including training and development, and scientific research. Therefore, a replacement for the SAFARI-1 Research Reactor, which has been in operation for more than 50 years, will be built.

A Ministerial Task Team has been established for the development of a Multipurpose Reactor for replacement of the SAFARI-1 Research Reactor.

Nuclear Decommissioning: Currently there is a policy gap in the national framework regarding decommissioning of nuclear facilities. One of the International Atomic Energy Agency's Integrated Regulatory Review Service (IRRS) Mission recommendations is the need for government to develop and approve a national policy for decommissioning of nuclear facilities. The development of the national nuclear decommissioning policy will strengthen the legislative framework and will clarify the policy requirements to be implemented when nuclear facilities in South Africa are decommissioned. The DMRE has initiated work on the development of the Nuclear Decommissioning Policy.

Nuclear Waste: It is very important for South Africa to demonstrate sustainable nuclear waste management. Solutions for management of spent nuclear fuel vary. South Africa's approach is currently to use onsite wet storage, as well as a Transient Interim Storage Facility. The National Radioactive Waste Disposal Institute has been designated to establish a Central Interim Storage Facility. Development work has commenced and is expected to be operational in 2025 while a Deep Geological Repository is planned for 2065.

4.6 Corporate Support

Corporate Services currently reflects a branch in transition as the DMRE changes. Its start-up organisational structure needs further unpacking as functions might have changed.

Employees have not been placed in the new structure, since there is no clarity yet on the resources and budget that will be available to plan around this area. Nonetheless, the branch's strategic planning process will provide a basis for further planning.

The National Macro Organisation of Government (NMOG) process must be concluded before normal recruitment resumes, and a skills audit of the DMRE is required. National Legislation and prescripts are in place to guide policy and processes, but data analysis can only be done once all employees have been placed.

The opportunity is, in the absence of the strategic planning process being concluded, to plan for the effective establishment of the DMRE. Interventions include the filling of vacancies, training and development, multi-skilling of human resources and change management.

The DMRE will embark on a review of the structure in partnership with the DPSA and do an in-depth analysis of the structure to ensure re-alignment thereof with the mandate and strategic priorities of the DMRE. It is envisaged that this priority process will form the foundation of HR processes to follow during the next five years.

Part C
Measuring Performance

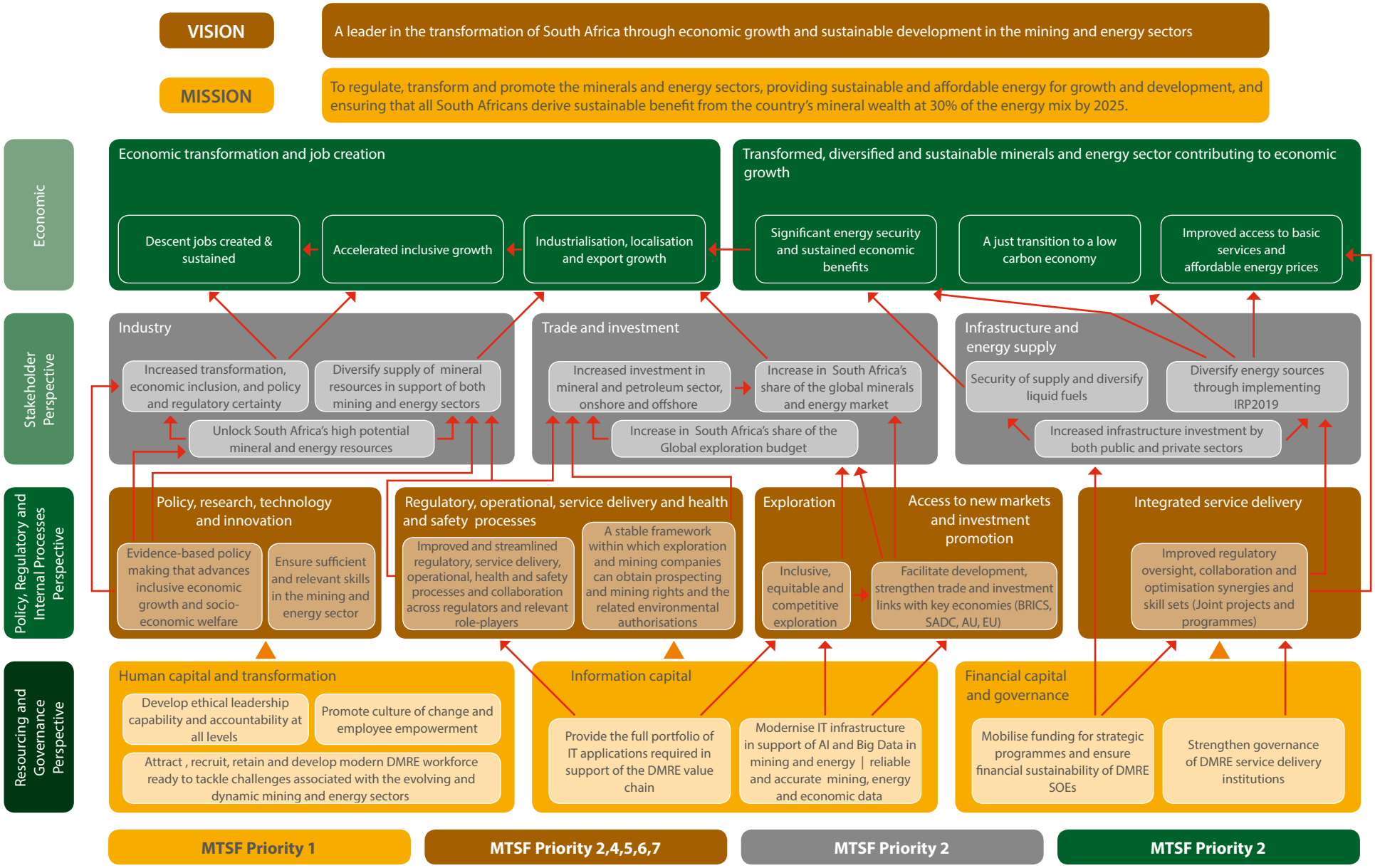


Figure 25: DMRE balanced scorecard

The Balanced Scorecard mapped for the DMRE is illustrated in Figure 25 preceding and articulates the strategic priorities of the DMRE in relation to the MTSF. The existence of the DMRE is premised on its vision of becoming a leader in the transformation of South Africa's economic growth agenda through the sustainable development of the mining and energy sectors. This vision will be operationalised by focusing on regulating, transforming and promoting the mining minerals and energy sectors, providing sustainable and affordable energy for growth and development, and ensuring that all South Africans derive sustainable benefit from the country's mineral wealth.

5 Institutional programme performance information

The DMRE will focus on the six core programmes on which the APP is premised. These programmes are the enabling functions that will allow the DMRE to meet the outcomes set out in its strategic plan.

5.1 Programme 1: Administration

Purpose: To provide support services to the DMRE to fulfil its mandate and achieve its strategic objectives.

Functions:

- Render auxiliary support and security services
- Render strategic human resources services
- Carry out oversight of all the DMRE's SOEs
- Ensure the provision of communications and media related services
- Provide professional legal support and advisory services to the Ministry and DMRE
- Develop and maintain all DMRE application systems and ensure a sound information technology service

Link to the Balanced Scorecard Framework

This programme is in support of the Resourcing and Governance Perspective of the Business Score Card as it relates to:

- Human Capital
- Information Capital
- Corporate Governance
- Financial Management

MTSF alignment

Programme 1 is well-positioned to support National Priority 1: A Capable, Ethical and Developmental State by focusing on:

- Effective and efficient strategic corporate services
- An efficient, effective and development-oriented DMRE
- Promoting sound corporate governance practices within the DMRE

5.1.1 Outcomes, outputs, performance indicators and targets

Outcome	Outputs	Output indicators	Annual targets						
			Audited/Actual performance			Estimated performance	MTEF period		
			2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Functional, efficient and integrated government Improved governance and accountability	Wasteful and fruitless expenditure eliminated	% elimination of wasteful and fruitless expenditure	N/A	N/A	N/A	N/A	100% elimination of wasteful and fruitless expenditure	100% elimination of wasteful and fruitless expenditure	100% elimination of wasteful and fruitless expenditure
	Reduced irregular expenditure	% reduction of irregular expenditure	N/A	N/A	N/A	N/A	100% reduction of irregular expenditure	100% reduction of irregular expenditure	100% reduction of irregular expenditure
	Unqualified audit opinion in department/s and entities	% reduction of qualified audits	N/A	N/A	N/A	N/A	100% reduction of qualified audits	100% reduction of qualified audit	100% reduction of qualified audit
	Consequences for corruption and misconduct enforced	% resolution of reported incidents of corruption	N/A	N/A	N/A	N/A	95% resolution of reported incidents of corruption	95% resolution of reported incidents of corruption	95% resolution of reported incidents of corruption
	Ethics committee established	Establish ethics committees and adhere to terms of reference	N/A	N/A	N/A	N/A	Establish ethics committees and adhere to terms of reference	Implement ethics committees and adhere to terms of reference	Ethics committee established

Outcome	Outputs	Output indicators	Annual targets						
			Audited/Actual performance			Estimated performance	MTEF period		
			2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Functional, efficient and integrated government Improved governance and accountability	Oversee the development of departmental Strategic and Annual Performance Plans and monitor the implementation thereof	Approval of Annual Performance Plans	N/A	N/A	N/A	N/A	Approved Annual Performance Plan	Approved Annual Performance Plan	Approved Annual Performance Plan
		Number of Quarterly Performance Reports and Annual Report	N/A	N/A	N/A	N/A	4 Quarterly Reports and Annual Report approved	4 Quarterly Reports and Annual Report approved	4 Quarterly Reports and Annual Report approved
Functional, efficient and integrated government	Enter into shareholder compact with schedule 2A SOEs	Approved shareholder compacts	N/A	N/A	N/A	N/A	Approved shareholder compacts	Approved shareholder compacts	Approved shareholder compacts
	Approval of SOEs Annual Performance Plans	Approved Annual Performance Plan					Approved Annual Performance Plan tabled in Parliament	Approved Annual Performance Plan tabled in Parliament	Approved Annual Performance Plan tabled in Parliament
Functional, efficient and integrated department	Integrated programme performance report on the implementation of the 2019–2024 MTSF Priorities	Number quarterly reports which detail the implementation of the 2019–2024 MTSF Priorities	N/A	N/A	N/A	N/A	4 Quarterly Reports which detail the implementation of the 2019–2024 MTSF Priorities	4 Quarterly Reports which detail the implementation of the 2019–2024 MTSF Priorities	4 Quarterly Reports which detail the implementation of the 2019–2024 MTSF Priorities

Outcome	Outputs	Output indicators	Annual targets						
			Audited/Actual performance			Estimated performance	MTEF period		
			2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
To ensure effective and sound financial resource management	Invoices from service providers paid within 30 days of receipt	Percentage of approved invoices from service providers paid within 30 days of receipt	100% approved invoices paid within 30 days of receipt	100% approved invoices paid within 30 days of receipt	100% approved invoices from service providers paid within 30 days of receipt	100% approved invoices from service providers paid within 30 days of receipt	100% approved invoices from service providers paid within 30 days of receipt	100% approved invoices from service providers paid within 30 days of receipt	100% approved invoices from service providers paid within 30 days of receipt

5.1.2 Output indicators: Annual and quarterly targets

Output indicators	Annual targets	Q1	Q2	Q3	Q4
% elimination of wasteful and fruitless expenditure in public sector institutions	100% elimination of wasteful and fruitless expenditure	No incidents of wasteful and fruitless expenditure, ongoing consequence management in cases	No incidents of wasteful and fruitless expenditure, ongoing consequence management in cases	No incidents of wasteful and fruitless expenditure, ongoing consequence management in cases	100% elimination of wasteful and fruitless expenditure
% reduction of irregular expenditure	100% reduction of irregular expenditure	No incidents of irregular expenditure, and consequence management	No incidents of irregular expenditure, and consequence management	No incidents of irregular expenditure, and consequence management	100% reduction of irregular expenditure
% reduction of qualified audits	100% reduction of qualified audits	N/A	N/A	N/A	100% reduction of qualified audits
% resolution of reported incidents of corruption	95% resolution of reported incidents of corruption	Develop the DMRE investigative policy/ procedure and capacity for investigations	Present the investigation policy to Exco/Risk and Audit Committee for approval	Implement the integrated Anti-fraud and Corruption Strategy	100% resolution of reported incidents of corruption

Output indicators	Annual targets	Q1	Q2	Q3	Q4
Implemented ethics structures	Establish ethics committees and adhere to terms of reference	Develop the DMRE Ethics Framework/Policy and ensure adequate capacity for implementation	Present the ethics policy at Exco/Risk and Audit Committee for approval and adoption	Implementation of the integrated ethics committee framework	Ethics committees established and adhere to terms of reference
Approved shareholder compacts	Approved shareholder compacts	N/A	N/A	Schedule 3A SOE's 1st draft APPs reviewed and submitted to the Minister	Shareholder compact and Corporate Plans of Schedule 2 SOEs
		4th Quarter Report	1st Quarter Report Annual Reports of SOEs tabled in Parliament	2nd Quarter Report	3rd Quarter Report
Annual Performance Plan tabled in Parliament	Annual Performance Plan approved	N/A	N/A	1st Draft submitted to DPME	APP tabled in Parliament
Number of Quarterly Performance reports produced	4 Quarterly Performance Reports produced	1 Quarter Report	1 Quarter Report	1 Quarter Report	1 Quarter Report
Annual Performance Report produced	Annual Report tabled in parliament	N/A	Annual Report tabled in Parliament	N/A	N/A
Annual Report which detail the implementation of the 2019–2024 MTSF Priorities	1 Annual Report which detail the implementation of the 2019–2024 MTSF Priorities	1 Quarterly Report which details the implementation of the 2019–2024 MTSF Priorities	1 Quarterly Report which details the implementation of the 2019–2024 MTSF Priorities	1 Quarterly Report which details the implementation of the 2019–2024 MTSF Priorities	1 Annual Report which details the implementation of the 2019–2024 MTSF Priorities
Percentage of approved invoices from service providers paid within 30 days of receipt	100% approved invoices from service providers paid within 30 days of receipt	100% approved invoices from service providers paid within 30 days of receipt	100% approved invoices from service providers paid within 30 days of receipt	100% approved invoices from service providers paid within 30 days of receipt	100% approved invoices from service providers paid within 30 days of receipt

5.1.3 Explanation of planned performance over the medium-term period

Programme 1: Administration will create an effective and efficient strategic support service to the line function and ensure the implementation of the National Skills Development (NSD) strategy and maintain a vacancy rate level below or equal to 10%. The DMRE's five-year communication strategy will be finalised and re-branding of all DMRE entities will be considered. The programme will support the development of policies and standard operating procedures for all its functions, as well as develop new web platforms, both for intranet and website users. An efficient, effective and development-oriented department aligns with MTSF Priority 1and emphasis will be placed on reviewing and implementing a service delivery improvement plan, ICT strategies and enterprise architecture that are aligned with the DMRE's strategic objectives. ICT infrastructure will be upgraded and refreshed, including the development and implementation of an enterprise software solution. This will promote access to information for decision-making and facilitating investment. A Corporate Governance of ICT Framework will be implemented.

Significant emphasis will be placed on eradicating fraud and corruption. The DMRE will develop an Investigative policy/procedure and provide anti-fraud and corruption capacity to conduct investigations on reported/alleged cases of maladministration, irregularities, fraud and corruption during the restructuring of the departmental organisation. The ethics structures, framework and policy will be developed in the first quarter of 2020/21 and implementation will commence in Q3 of the 2020/21 financial year.

To promote sound corporate governance practices within the DMRE, the programme will manage appeals, litigation, legal drafting (such as opinions, agreements and legislation), Promotion of Access to Information Act (PAIA) requests, and MHI inquiries and investigations. An integrated stakeholder management framework will be developed. Initiatives around additional funding will be driven by Programme 1 through the financial management services, in consultation with various programme managers. Different funding mechanisms should be explored, including funds set aside, donor funding, engagement with National Treasury (NT), the redirection of resources, collaboration, sponsorships, and funding for communication activities. This programme will pursue different funding mechanisms (set aside, donor funding, engagement with NT, redirection of resources, collaboration, sponsorships, funding for communication activities) to realise the outputs and improvements in related performance indicators that are anticipated over the MTSF period.

5.1.4 Programme resource consideration

Programme 1: Administration (Sub-programmes)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Ministry	74 436	78 841	73 699	65 009	63 509	58 040	64 525	61 487
Departmental Management	39 387	41 150	47 377	53 713	53 713	58 655	62 139	65 136
Audit Services	17 543	16 414	17 830	22 614	22 614	23 170	24 607	25 671
Financial Administration	79 211	83 853	84 740	102 537	101 556	100 428	106 472	111 318
Corporate Services	349 578	327 015	333 169	289 694	294 440	305 794	324 198	338 511
Office Accommodation	52 085	57 599	65 285	93 104	89 058	96 256	101 281	105 702
Total for Programmes	**612 240**	**604 872**	**622 100**	**626 671**	**624 890**	**642 343**	**683 222**	**707 825**

Programme 1: Administration (Economic classification)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Current payments	**595 109**	**585 281**	**603 570**	**606 504**	**605 004**	**621 467**	**661 155**	**684 555**
Compensation of employees	**293 457**	**299 359**	**319 937**	**356 413**	**354 913**	**365 472**	**391 275**	**404 701**
Salaries and wages	256 893	261 672	279 997	311 482	309 970	320 703	343 346	355 128
Social contributions	36 564	37 687	39 940	44 931	44 943	44 769	47 929	49 573
Goods and services	**301 652**	**285 922**	**283 633**	**250 091**	**250 091**	**255 995**	**269 880**	**279 854**
Administrative fees	2 980	2 762	2 164	3 171	3 212	3 213	3 397	3 435
Advertising	5 970	1 782	2 621	4 601	4 627	4 769	5 032	5 255

Programme 1: Administration (Economic classification)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000
Minor assets	1 767	1 719	534	3 979	3 260	4 267	4 503	4 664
Audit costs: External	10 052	11 555	11 334	9 229	9 229	9 778	10 316	10 750
Bursaries: Employees	1 789	1 864	2 482	2 914	2 914	3 042	3 202	3 332
Catering: Departmental activities	719	982	1 013	1 727	1 791	1 628	1 720	1 771
Communication (G&S)	14 475	14 872	8 226	6 369	6 548	6 731	7 101	7 317
Computer services	34 986	34 823	31 102	30 141	31 156	31 723	33 468	34 839
Consultants: Business and advisory services	6 729	6 024	5 069	7 888	6 429	7 798	8 243	8 597
Legal services (G&S)	6 016	3 152	3 552	1 062	1 062	1 120	1 181	1 232
Contractors	2 372	995	1 327	2 893	2 542	3 075	3 244	3 363
Agency and support/outsourced services	(4)	189	297	833	440	879	927	971
Entertainment	8	18	-	275	226	279	294	287
Fleet services (including government motor transport)	7 202	7 133	8 122	5 500	5 783	5 676	5 985	6 187
Inventory: Clothing material and accessories	53	-	-	-	-	-	-	-
Inventory: Food and food supplies	19	-	-	-	-	-	-	-
Inventory: Materials and supplies	213	-	-	-	-	-	-	-
Inventory: Medical supplies	2	-	-	-	-	-	-	-
Consumable supplies	1 602	1 767	1 507	3 810	4 131	3 988	4 205	4 338
Consumables: Stationery, printing and office supplies	5 764	4 545	4 652	7 158	7 462	7 189	7 587	7 898
Operating leases	126 799	122 444	129 762	87 185	83 855	92 027	97 083	101 256
Rental and hiring	203	213	87	180	290	27	29	30
Property payments	15 085	13 514	14 355	15 652	18 175	15 628	16 224	16 890

Programme 1: Administration (Economic classification)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Travel and subsistence	42 485	41 171	42 500	35 614	37 182	33 758	35 664	36 191
Training and development	7 471	7 462	6 626	7 917	7 917	8 177	8 618	8 990
Operating payments	4 215	3 324	2 954	7 058	7 648	7 470	7 888	8 174
Venues and facilities	2 680	3 612	3 347	4 935	4 212	3 753	3 969	4 087
Interest and rent on land	**-**	**-**	**1**	**-**	**-**	**-**	**-**	**-**
Interest (Incl. interest on unitary payments (PPP))	-	-	1	-	-	-	-	-
Rent on land	-	-	-	-	-	-	-	-
Transfers and subsidies	**4 978**	**7 409**	**4 024**	**3 346**	**3 346**	**3 505**	**3 698**	**3 857**
Departmental agencies and accounts	985	1 048	1 108	1 170	1 170	1 209	1 276	1 324
Foreign governments and international organisations	-	-	-	-	-	-	-	-
Households	3 993	6 361	2 916	2 176	2 176	2 296	2 422	2 533
Payments for capital assets	**12 031**	**12 182**	**14 418**	**16 821**	**16 540**	**17 371**	**18 369**	**19 413**
Buildings	-	263	636	2 056	2 056	2 126	2 286	2 416
Other fixed structures	153	-	-	-	-	-	-	-
Transport equipment	3 262	2 565	1 972	-	-	-	-	-
Machinery and equipment	8 616	8 562	11 810	14 765	14 484	15 245	16 083	16 997
Software and other intangible assets	-	792	-	-	-	-	-	-
Payments for financial assets	**122**	**-**	**87**	**-**	**-**	**-**	**-**	**-**
Total economic classification	**612 240**	**604 872**	**622 100**	**626 671**	**624 890**	**642 343**	**683 222**	**707 825**

Programme 1: Administration (Transfer Payments)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Beneficiary	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Employee social benefits	3 060	6 071	2 589	1 779	1 779	1 877	1 980	2 074
Employee ex-gratia payments	120	40	327	397	397	419	442	459
Energy and Water Sector Education and Training Authority	985	1 048	1 108	1 170	1 170	1 209	1 276	1 324
Bursaries for non-employees	813	250	-	-	-	-	-	-
Total	**4 978**	**7 409**	**4 024**	**3 346**	**3 346**	**3 505**	**3 698**	**3 857**

5.2 Programme 2: Minerals and Petroleum Regulation (MPR)

Purpose: To regulate the mining, minerals and petroleum industry

Functions:

- Manage the administration and evaluation of prospecting and mining rights
- Ensure technical, economic and legal compliance and enforcement in line with the Petroleum Products Act (PPA)
- Manage enforcement and compliance of mining activities with the NEMA
- Manage the Petroleum Licensing process and ensure the security of fuel supply in the country
- Provide specialised empowerment transaction assessment service
- Render a specialised administration and information service

Link to Balanced Scorecard

This Programme links with the Policy and Regulatory perspective of the Balanced Score Card in the areas of regulation, operations, service delivery and health and safety processes.

MTSF alignment

Equitable and sustainable benefit from mineral resources will contribute to Priority 2. This will be achieved through the enforcement of the MPRDA, SLP and Mining Charter commitments, and by conducting compliance inspections. The participation of black industrialists will be facilitated, and mining work programmes will be evaluated. The entrance of HDSAs will be facilitated and their meaningful economic participation in the petroleum industry will be promoted.The monthly returns on issued rights and inspections for sustainable resource use will be assessed and environmental compliance inspections will be increased, coupled with the issuing of notices to remedy environmental non-compliance. A transformed minerals sector will be facilitated in the form of access of HDSAs to the mineral and energy sectors and promoting meaningful economic participation of HDSAs by participating in consultation and engagement sessions.

Economic transformation and job creation will stem from an efficient, effective and development-oriented DMRE. The branch will commission an independent B-BBEE audit, to evaluate and monitor progress on transformation in the petroleum and liquid fuels industry. It will conduct compliance inspections and reports, including SLPs, and issue statutory notices or orders for non-compliance. These include mine economics verification, environmental, and random fuel sample inspections. Petroleum, prospecting and mining applications will be adjudicated in line with legislated timeframes (90% for petroleum applications and 70% for mineral applications). The suitability of the financial provision will be reviewed.

With regards to Spatial Integration, Human Settlements and Local Government (Priority 5), this branch will implement the Housing and Living Conditions Standards for the Mining Sector and inspect special reference to housing aspects. It will pursue the integration of IDPs and SLPs. Priority 1, A Capable, Ethical and Developmental State, will be supported by improved enforcement of all mineral-related legislation in partnership with law enforcement agencies (SAPS, NPA, SARS and SARB).

5.2.1 Outcomes, outputs, performance indicators and targets

Outcome	Outputs	Output indicators	Annual targets						
			Audited/Actual performance			Estimated performance	MTEF period		
			2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Investing in accelerated inclusive growth	Jobs created	Number of direct jobs created per investment	N/A	N/A	N/A	8 500	8 500	8 500	8 500
		Number of SLP development projects completed	120	120	120	120	120	120	120
		Number of black industrialists created through procurement	10	10	10	10	10	10	10
	Participation in District Planning Forums (joined up plans)	% of participation in District Planning Forums (joined up plans)	N/A	N/A	N/A	N/A	100% Participation in District Planning Forums (joined-up plans)	100% Participation in District Planning Forums (joined-up plans)	100% Participation in District Planning Forums (joined-up plans)
Security of supply and diversified liquid fuels	Strategy and plan on liquid fuels reviewed	Strategy and plan on liquid fuels reviewed and updated	N/A	N/A	N/A	Integrated Energy Plan (IEP)	Strategy and plan for liquid fuels updated by 2022	Strategy and plan for liquid fuels updated	N/A

Outcome	Outputs	Output indicators	Annual targets						
			Audited/Actual performance			Estimated performance	MTEF period		
			2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Security of supply and diversified liquid fuels	Feasibility study completed	Feasibility study on new oil refinery completed and final investment decision made	N/A	N/A	N/A	Draft feasibility study	Feasibility study on new oil refinery completed and final investment decision made	Initiate and complete Front-End Engineering and Design	Final Investment Decision and Design
Investing in accelerated inclusive growth	Monitor and enforce compliance	Number of SLP inspections conducted	212	212	212	212	212	212	212
		Number of retail site compliance inspections conducted per year	1 500	1 500	1 500	1 500	1 500	1 500	1 500
	Fuel samples tested	Number of fuel samples tested	1 080	1 080	1 080	1 080	1080	1 080	1 080
		Number of legal compliance inspections (mineral laws-MLA) conducted	150	150	150	150	150	150	150
	Transformed sector	Number of mining economics (MWP/PWP) inspections conducted	500	500	500	500	500	500	500
		Number of environmental inspections conducted	1 275	1 275	1 275	1 275	1 275	1 275	1 275
		% of petroleum licence applications approved with a minimum of 50% HDSA ownership	50%	50%	50%	50%	50%	50%	50%

Outcome	Outputs	Output indicators	Annual targets						
			Audited/Actual performance			Estimated performance	MTEF period		
			2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Investing in accelerated inclusive growth	Transformed sector	Compliance monitoring audit of the B-BBEE Act in the petroleum sector to be done every 2nd year (charter sector code)	N/A	N/A	N/A	N/A	100%	N/A	100%
		Number of rights and permits granted and/or issued to HDSA controlled entities	120	120	120	120	120	120	120

5.2.2 Output indicators: annual and quarterly targets

Output indicators	Annual targets	Q1	Q2	Q3	Q4
Number of direct jobs created per investment	8 500	N/A	3 000	5 000	8 500
Strategy and plan on liquid fuels reviewed and updated	Strategy and plan for liquid fuels approved by Cabinet	Drafting and Consultation	Submit IEP to Minister for approval	Submit to Cluster/ Cabinet approval system	Strategy and plan for liquid fuels approved by Cabinet
Feasibility study completed	Feasibility study on new oil refinery completed by 31 March 2021 and final investment decision made	Submit the Prefeasibility Study Report to Cabinet	Initiate the Feasibility Study	Milestone Report on progress on Feasibility Study	Feasibility Study on new oil refinery completed by 31 March 2021
Number of petroleum retail site inspections conducted per year	1 500	350	750	1 000	1 500
Number of fuel samples tested	1 080	270	540	810	1 080
Number of legal compliance inspections (mineral laws-MLA) conducted	150	37	74	112	150

Output indicators	Annual targets	Q1	Q2	Q3	Q4
Number of mining economics (MWP/PWP) inspections conducted	125	125	125	125	125
Number of environmental inspections conducted	1 275	319	638	957	1 275
% of licence applications approved where HDSA ownership is at least 50%	50%	50%	50%	50%	50%
Number of Social Labour Plans (SLP) development projects completed	120	30	60	90	120
Number of black industrialists created through procurement	10	2	5	7	10
% on compliance monitoring audit of the B-BBEE Act in the petroleum sector to be done every 2nd year (charter)	100%	100%	100%	100%	100%
Number of rights and permits granted and/or issued to HDSA controlled entities	120	30	60	90	120
Number of SLP inspections conducted	212	53	106	159	212

5.2.3 Explanation of planned performance over the medium-term period

This programme has identified interventions to ensure that the DMRE outcomes are achieved through the delivery of the outcomes and related indicator targets. Improvement in turnaround time of licensing will be achieved by strengthening capacity and review of the process using technology to track and unblock bottlenecks. Enhanced co-operation between the DMRE, Department of Water and Sanitation (DWS) and Department of Environmental Affairs (DEA) aims to implement one environmental system for improved integration. The outcome will be an expedient licensing regime.

Optimal utilisation of mineral resources will be achieved by addressing the significant number of mines that are under care-maintenance, business rescue and liquidation. A framework on dealing with those mines will be developed and the Ten Point Plan reviewed. The availability of geological data will improve the current concentration of petroleum and minerals. The DMRE will encourage partnerships between emerging junior miners, and review legislation with regards to the Petroleum Bill. Inputs obtained from stakeholders will drive inclusive, equitable and competitive exploration. Lack of transformation in minerals and petroleum sectors that are reflective of the country's demographics, will be addressed. Compliance with the relevant legislative frameworks will be enforced and additional funding mechanisms for exploration, mining and petroleum will be investigated.

Accessibility to, and availability of land for exploration, monitoring of compliance, and mining is necessary. The DMRE will engage respective landowners (trusts, chiefs, municipalities etc.) and consider legislative amendments around petroleum activities.

Infrastructure development (energy, rail, and water) will improve the availability and accessibility of supporting infrastructure for mining and petroleum. The DMRE will engage other departments (Department of Agriculture, Forestry and Fisheries (DAFF), Department of Public Enterprises (DPE), Department of Water and Sanitation (DWS) to facilitate access to essential facilities such as import/export facilities, storage, and pipelines.

The cost of energy for the mining sector is a great concern. Own energy generation will be encouraged and supported to reduce the cost. The DMRE will pursue meaningful state participation in Eskom's coal supply, along with sustainable and affordable energy for mining. Efforts will be made to eradicate illegal mining and illicit petroleum trading by reviewing the legislative framework to prevent illegal mining (such as the Municipal Public-Private Partnership Pilot Programme (MPPP). In addition, a framework on how to support artisan miners will be developed and implemented. Collaboration with SARS and other law enforcement agencies will aid in eradicating illegal mining.

Job losses in the mining and petroleum sectors will be minimised by developing guidelines for business rescue processes, and actively participating in liquidation processes. The DMRE will develop guidelines on how to manage, care and maintain the section 52 process, and strengthen the Ten Point Plan. Sustainable implementation of social labour plans will be achieved by strengthening the framework and facilitating intergovernmental forums led by the DMRE. This will address the lack of formalised community structures.

Electricity blackouts caused by inadequate household energy supply will be met through the rollout of liquid petroleum gas (LPG) as an alternative, conducting LPG Safety Awareness campaigns and encouraging more investments in the LPG sector. This will reduce reliance on electricity usage. South Africa's reliance on international crude oil will be reduced through the electrification of the transportation sector, and an integrated approach to transport sector transition. Oil field exploration will be pursued, and a targeted source diversification strategy will be developed focusing on Africa, while both the Biofuels Framework and Strategic Stock Policy will be implemented.

5.2.4 Programme resource considerations

Programme 2: Minerals and Petroleum Regulation (Sub-programmes)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Minerals and Petroleum Management	16 775	16 708	23 486	32 196	32 196	33 207	35 019	36 408
Mineral Regulation and Administration	238 705	345 398	355 036	399 226	399 226	425 774	451 179	468 143
Environmental Enforcement and Compliance	6 739	12 395	15 051	15 992	15 992	17 339	18 444	19 143
Petroleum Compliance Monitoring, Enforcement and Fuel Pricing	21 556	18 781	19 262	26 117	25 660	26 524	28 028	29 367
Petroleum Licensing and Fuel Supply	57 435	55 859	57 781	65 152	64 695	71 869	76 024	79 667
Total for Programmes	**341 210**	**449 141**	**470 616**	**538 683**	**537 769**	**574 713**	**608 694**	**632 728**

Programme 2: Minerals and Petroleum Regulation (Economic Classification)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Current payments	**287 061**	**293 932**	**312 799**	**346 612**	**345 698**	**373 301**	**396 224**	**412 358**
Compensation of employees	**234 605**	**244 993**	**253 276**	**278 477**	**277 563**	**302 679**	**321 666**	**335 058**
Salaries and wages	202 535	210 949	217 499	243 653	242 711	265 602	282 264	294 015
Social contributions	32 070	34 044	35 777	34 824	34 852	37 077	39 402	41 043
Goods and services	**52 456**	**48 939**	**59 523**	**68 135**	**68 135**	**70 622**	**74 558**	**77 300**
Administrative fees	883	889	678	991	999	1 063	1 121	1 167
Advertising	892	208	242	1 486	974	1 559	1 645	1 720

Programme 2: Minerals and Petroleum Regulation (Economic Classification)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Minor assets	16	17	13	127	127	137	145	150
Catering: Departmental activities	221	319	1 188	855	843	889	940	976
Communication (G&S)	4 225	3 941	3 653	4 209	4 189	4 563	4 816	5 004
Computer services	469	759	4 329	7 167	7 167	7 543	7 911	8 204
Consultants: Business and advisory services	10 597	8 919	10 201	13 308	13 081	13 154	13 917	14 556
Legal services (G&S)	5 351	5 680	6 577	1 137	1 485	1 234	1 302	1 351
Contractors	18	21	70	25	70	26	27	28
Fleet services (including government motor transport)	3 475	3 870	5 100	4 208	4 308	4 580	4 832	5 012
Inventory: Materials and supplies	5	-	-	-	-	-	-	-
Consumable supplies	649	641	667	1 140	1 187	1 228	1 296	1 345
Consumables: Stationery, printing and office supplies	1 328	1 031	963	2 574	2 553	2 794	2 944	3 055
Operating leases	20	229	757	150	577	163	172	178
Rental and hiring	-	-	463	20	20	22	23	24
Property payments	1	1	-	5	5	5	6	6
Travel and subsistence	20 336	19 911	22 520	24 172	24 485	25 353	26 793	27 585
Training and development	980	188	57	731	731	775	819	849
Operating payments	1 407	847	761	1 327	1 040	1 426	1 504	1 568
Venues and facilities	1 583	1 468	1 284	4 503	4 294	4 108	4 345	4 522
Transfers and subsidies	**53 329**	**154 077**	**157 563**	**192 028**	**192 028**	**201 367**	**212 423**	**220 320**
Departmental agencies and accounts	53 205	65 865	59 105	61 544	61 544	63 630	67 131	69 626

Programme 2: Minerals and Petroleum Regulation (Economic Classification)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Foreign governments and international organisations	-	1 074	-	3 038	3 038	3 205	3 381	3 507
Private enterprises	-	87 138	98 439	127 446	127 446	134 532	141 911	147 187
Households	124	-	19	-	-	-	-	-
Payments for capital assets	**604**	**1 132**	**179**	**43**	**43**	**45**	**47**	**50**
Transport equipment	-	-	-	-	-	-	-	-
Other machinery and equipment	604	1 132	179	43	43	45	47	50
Software and other intangible assets	-	-	-	-	-	-	-	-
Payments for financial assets	**216**	**-**	**75**	**-**	**-**	**-**	**-**	**-**
Total economic classification	**341 210**	**449 141**	**470 616**	**538 683**	**537 769**	**574 713**	**608 694**	**632 728**

Programme 2: Minerals and Petroleum Regulation (Transfer Payments)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Beneficiary	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Employee social benefits	124	-	19	-	-	-	-	-
African Petroleum Producers' Association	-	1 074	-	3 038	3 038	3 205	3 381	3 507
South African Diamond and Precious Metals Regulator	53 205	65 865	59 105	61 544	61 544	63 630	67 131	69 626
Petroleum Agency South Africa	-	87 138	98 439	127 446	127 446	134 532	141 911	147 187
TOTAL	**53 329**	**154 077**	**157 563**	**192 028**	**192 028**	**201 367**	**212 423**	**220 320**

5.3 Programme 3: Mining, Minerals and Energy Policy Development (MMEPD)

Purpose: Formulate, and maintain Integrated Minerals and Energy Policies to promote and encourage investments into the mining and energy industry

Functions:

- Provide administrative support and manage the dissemination of information and publications
- Provide a policy and legislation framework for mining, minerals and petroleum sectors
- Promote minerals development and advise on trends in the mining industry to attract investment
- Promote economic growth and attract investments
- Ensure the security of mineral resources and energy supply through planning
- Develop and review policies as required by international agreements and governance of the nuclear sector in South Africa

Link to Balanced Scorecard

This programme links to the following different Balanced Scorecard perspectives:

- Policy and Regulatory Perspective relating to regulatory, operations, service delivery and health and safety processes
- Stakeholder perspective relating to industry and trade and Investment
- Economic perspective as it relates to economic transformation and job creation and transformed, diversified and sustainable minerals and energy sectors

MTSF alignment

The Mining, Minerals and Energy Policy Branch supports and promotes MTSF priorities in the following areas:

- Economic transformation and job creation will be achieved through a transformed mineral, upstream petroleum and downstream sector, as well as diversified sources of energy supply. This aligns with the initiative to develop and review legislation, policies and strategies, as they relate to the mining, mineral, upstream and downstream petroleum, and energy sectors. Reliable statistical data on the minerals and energy sectors will support this priority. Areas to support investment will include a focus on local domestic investment, such as reviewing legislation to reduce barriers for new entrants and small-scale miners while sustainable resource use will be promoted.
- The implementation of IRP2019 will support the MTSF priority focused on promoting energy access, efficiency, and diversified sources.
- The Mine Health and Safety Act and Petroleum Health and Safety Act will be amended to meet the needs of education, skills and health in the mining and energy sectors.
- Spatial Integration, Human Settlements and Local Government will benefit from quality data and analysis - quality economic analysis on the mining and energy sectors, including household energy access data, will be provided.
- A Capable, ethical and developmental State, Priority 1, will support improved turnaround times and will develop and review internal processes to advance the continuous development of improved systems for monitoring and evaluation.
- Existing bi-lateral and multilateral agreements will be implemented, and new agreements concluded and implemented to support Priority 7, A better Africa and better World.

5.3.1 Outcomes, outputs, performance indicators and targets

Outcome	Outputs	Output indicators	Annual targets						
			Audited/Actual performance			Estimated performance	MTEF period		
			2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Investing in accelerated inclusive growth	Framework for a just transition to a low carbon economy finalised	Framework for a just transition to a low carbon economy developed	N/A	N/A	N/A	N/A	Submit LFRM, GIDP for Cabinet approval	Engagement framework for affected communities developed and implemented	Review/Update Sector Plans (IRP, LFRM, GID)
		Number of legislative instruments developed/ reviewed or amended				Draft IEP		Submit the IEP for Cabinet approval	
		GHG reporting and assessment framework developed, approved and implementation monitored	N/A	N/A	N/A	N/A	GHG Reporting and assessment framework for energy and mining developed and submitted for Ministerial approval	1 Transition Plan developed, monitored, quantified and report for high carbon emitting sectors	1 Transition Plan developed, monitored, quantified and report for high carbon emitting sectors
		Number of approved and listed carbon offset projects	N/A	N/A	N/A	N/A	4	4	4

Outcome	Outputs	Output indicators	Annual targets						
			Audited/Actual performance			Estimated performance	MTEF period		
			2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
	Improved energy-related climate change response measures and environmental compliance	Number of energy related climate change response measures monitored, quantified and reported	N/A	N/A	N/A	N/A	1	1	1
Investing in accelerated inclusive growth	Finalised CDM projects	Number of finalised CDM projects	N/A	N/A	N/A	N/A	2 projects finalised	2 projects finalised	2 projects finalised
	Attract investments into the minerals and energy industrial complex	Number of investment promotion events held	N/A	N/A	N/A	N/A	10 investment promotion events in the minerals and energy industrial complex held	10 investment promotion events in the minerals and energy industrial complex held	10 investment promotion events in the minerals and energy industrial complex held
Increased investment in the mineral and energy sectors	Promotional activities to increase investment in the minerals and energy sectors	Number of publications and economic reports supporting investment and sustainable resource use	25	25	25	25	25	25	25

Outcome	Outputs	Output indicators	Annual targets						
			Audited/Actual performance			Estimated performance	MTEF period		
			2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Increased investment in the mineral and energy sectors	Analysis of the minerals and energy sectors and provide advisory services to inform on topical issues	Chrome Beneficiation Promotion Strategy	N/A	N/A	N/A	N/A	Chrome Beneficiation Strategy submitted to Cabinet for approval	N/A	N/A
Enhanced relations with Africa and the World	Bilateral Agreements implemented and new agreements concluded	Number of existing agreements implemented	N/A	N/A	N/A	N/A	20	20	20
		New agreements concluded	N/A	N/A	N/A	N/A	1	1	1
		Number of multilateral strategic partnerships implemented	N/A	N/A	N/A	N/A	10	10	10
Roadmap for the growth and sustainability of the minerals sector	Mining Masterplan finalised	Mining Masterplan developed	N/A	N/A	N/A	N/A	Draft Mining Masterplan submitted to economic cluster	Draft Mining Masterplan submitted to Cabinet for approval	N/A

Outcome	Outputs	Output indicators	Annual targets						
			Audited/Actual performance			Estimated performance	MTEF period		
			2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Transformed minerals and upstream petroleum sector	Legislation, policies developed/ reviewed or amended	Number of legislative instruments developed/ reviewed or amended	N/A	N/A	N/A	N/A	Artisanal and Small-Scale Mining Policy approved by Cabinet	Coal Policy approved by Cabinet	Maximum Refinery Gate Price Regulations gazetted for implementation
			N/A	N/A	N/A	N/A	Geoscience Act Regulations gazetted for implementation	Liquid Petroleum Gas Strategy approved	Artisanal and Small-Scale Mining Bill submitted for tabling in Parliament

Outcome	Outputs	Output indicators	Annual targets						
			Audited/Actual performance			Estimated performance	MTEF period		
			2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Supply of electricity secured	Improved nuclear policy and regulatory framework	National Nuclear Regulator Amendment Bill	N/A	N/A	N/A	N/A	National Nuclear Regulator Amendment Bill submitted to Cabinet for public consultation	Submission of the NNR Bill for tabling in Parliament	Nuclear Regulator Amendment Bill promulgated into an Act of Parliament
	Improved nuclear policy and regulatory framework	Radioactive Waste Management Fund Bill	N/A	N/A	N/A	N/A	Radioactive Waste Management Fund Bill submitted to the economic cluster	Radioactive Waste Management Fund Bill submitted to Cabinet for public consultations and tabling in Parliament	Radioactive Waste Management Fund Bill promulgated into an Act of Parliament
		Regulations on the long-term operation of nuclear installations	N/A	N/A	N/A	N/A	Draft Regulations on the long-term operation of nuclear installations published for public comments	Regulations on the long-term operation of nuclear installations gazetted for implementation	N/A

Outcome	Outputs	Output indicators	Annual targets						
			Audited/Actual performance			Estimated performance	MTEF period		
			2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Supply of electricity secured	Legislation to improve the electricity policy and regulatory framework	National Energy Regulator Amendment Bill	N/A	N/A	N/A	N/A	National Energy Regulator Amendment Bill submitted to Cabinet for public consultation	Proposal on the National Energy Regulator Bill submitted for tabling in Parliament	National Energy Regulator Bill promulgated into an Act of Parliament
		Electricity Pricing Policy reviewed					Electricity Pricing Policy reviewed and submitted to Cabinet		
	Legislation to improve the gas policy and regulatory framework	Amended Gas Act	N/A	N/A	N/A	N/A	Gas Amendment Bill submitted to Cabinet for tabling in Parliament	Gas Amendment Bill promulgated into an Act of Parliament	Implementation of the Act
		Gas Infrastructure Master Plan	N/A	N/A	N/A	N/A	Draft Gas Master Infrastructure Plan submitted to Cabinet for public comments	Gas Master Plan approved by Cabinet	N/A
		Integrated Energy Plan	N/A	N/A	N/A	N/A	Draft Integrated Energy Plan submitted to Cabinet for public consultations	Integrated Energy Plan approved by Cabinet	N/A

Outcome	Outputs	Output indicators	Annual targets						
			Audited/Actual performance			Estimated performance	MTEF period		
			2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Supply of electricity secured	Adam Framework finalised	Framework for municipal infrastructure asset management	N/A	N/A	N/A	N/A	Adam Framework submitted to Cabinet for approval	N/A	N/A

5.3.2 Output indicators: Annual and quarterly targets

Output indicators	Annual targets	Q1	Q2	Q3	Q4
Framework for a just transition to a low carbon economy developed	Submit LFRM, GIDP for Cabinet approval	Develop conceptual framework for a just transition	Engage government stakeholders	Broader stakeholder engagements and consultation	Framework for a just transition to a low carbon economy developed Submit LFRM, GIDP for Cabinet approval
GHG reporting and assessment framework developed, approved and implementation monitored	GHG reporting and assessment framework for the energy and mining sectors developed and submitted for Ministerial approval	Stakeholder consultation and scoping of the project finalised	Data collection and development of inception report	Draft framework and consolidated stakeholder consultation report	Final GHG reporting framework developed and submitted for Ministerial approval
Number of approved and listed carbon offset projects	4 approved and listed carbon offset projects	Carbon offset administration system developed and launched to receive applications	1 carbon offset project application processed and approved	1 carbon offset project application processed and approved	2 carbon offsets projects application processed and approved
Number of reports on energy-related climate change response measures monitored, quantified and reported	1 report on energy-related climate change response measures monitored, quantified and reported	N/A	N/A	N/A	Report on the assessment of policy gaps and misalignment with NDCs
Number of finalised CDM projects	2 finalised CDM projects	CDM project(s) applications reviewed, finalised and processed within designated timeframes	1 CDM project(s) applications reviewed, finalised and processed within designated timeframes	CDM project(s) applications reviewed, finalised and processed within designated timeframes	1 CDM project(s) applications reviewed, finalised and processed within designated timeframes
Number of investment promotion events held	10 investment promotion events held	2 investment promotion events hosted or attended	5 investment promotion events hosted or attended	7 investment promotion events hosted or attended	10 investment promotion events hosted or attended

Output indicators	Annual targets	Q1	Q2	Q3	Q4
Number of publications and economic reports supporting investment and sustainable resource use	25 publications and economic reports supporting investment and sustainable resource use	5	12	17	25
Chrome Beneficiation Promotion Strategy	Chrome Beneficiation Strategy submitted to Cabinet for approval	N/A	N/A	N/A	Chrome Beneficiation Strategy submitted to Cabinet for approval
Bilateral agreements concluded and implemented	20 existing agreements implemented	5 existing agreements implemented	5 existing agreements implemented	5 existing agreements implemented	5 existing agreements implemented
	1 new bilateral agreement concluded and implemented	N/A	N/A	N/A	1 new agreement concluded
Number of multilateral strategic partnerships implemented	10 multilateral strategic partnerships implemented	2 multilateral strategic partnerships implemented	3 multilateral strategic partnerships implemented	2 multilateral strategic partnerships implemented	3 multilateral strategic partnerships implemented
Mining Masterplan developed	Mining Masterplans developed	Drafting of the Masterplan	Drafting of the Masterplan	Stakeholder consultation on the Draft Masterplan	Mining Masterplan submitted to Cabinet for approval
Number of legislative instruments developed/ reviewed or amended	2 legislative instruments developed/ reviewed or amended	N/A	N/A	N/A	Artisanal and Small-Scale Mining Policy approved by Cabinet
					Geoscience Act Regulations gazetted for implementation
Legislation to improve the nuclear policy and regulatory framework	National Nuclear Regulator Amendment Bill submitted to Cabinet for public consultation	N/A	Submit the National Nuclear Regulator Amendment Bill to FOSAD	Consolidate inputs from FOSAD into Nuclear Regulator Amendment Bill	National Nuclear Regulator Amendment Bill Submitted to Cabinet for public consultation
	Radioactive Waste Management Fund Bill submitted to Cabinet	Address comments from DPME on SEIAS 1	Compile SEIAS 2 report	Evaluate and address DPME comments	Submit Radioactive Waste Management Fund Bill to Cabinet

Output indicators	Annual targets	Q1	Q2	Q3	Q4
Regulations on the long-term operation of nuclear installations	Draft Regulations on the long-term operation of nuclear installations published for public comments	N/A	N/A	N/A	Draft Regulations on the long-term operation of nuclear installations published for public comments
Legislation to improve the electricity policy and regulatory framework	National Energy Regulator Amendment Bill certified by State Law Advisor	Proposal on the National Energy Regulator Bill considering comments by Cabinet	N/A	National Energy Regulator Bill submitted to State Law Advisor	National Energy Regulator Amendment Bill certified by State Law Advisor
Electricity Pricing Policy reviewed	Electricity Pricing Policy reviewed and submitted to Cabinet	N/A	N/A	N/A	Electricity Pricing Policy reviewed and submitted to Cabinet
Legislation to improve the gas policy and regulatory framework	Gas Amendment Bill submitted to Cabinet for onward transmission to Parliament	N/A	Submit the Gas Amendment Bill to FOSAD	Submit the Gas Amendment Bill to DPME	Gas Amendment Bill submitted to Cabinet for onward transmission to Parliament
Gas Infrastructure Master Plan	Draft Gas Master Infrastructure Plan submitted to Cabinet for public comments	N/A	N/A	N/A	Draft Gas Master Infrastructure Plan submitted to Cabinet for public comments
Integrated Energy Plan	Draft Integrated Energy Plan submitted to Cabinet for public comments	N/A	N/A	N/A	Draft Integrated Energy Plan submitted to Cabinet for public comments
Framework for municipal infrastructure asset management	Adam Framework submitted to Cabinet for approval	Benchmarking, develop norms and standards for municipal electricity asset management	Finalised Framework	Engagement with municipalities to develop implementation protocol	Target specific municipalities for intervention and sign SLAs with those affected
					Adam Framework submitted to Cabinet for approval

5.3.3 Explanation of planned performance over the medium-term period

This branch will continue to focus on developing and reviewing mining, mineral, upstream and downstream petroleum, together with energy legislation, policies and strategies to encourage investment, growth and transformation in the mining and energy sectors. Key policy development and amendment areas include:

To enable energy supply and encourage the diversification of energy resources, the following legislative instruments will receive focus over the MTSF period:

- National Nuclear Regulator Amendment Bill, Radioactive Waste Management Fund Bill, Gas Amendment Bill, National Energy Regulator Amendment Bill
- Develop an Integrated Energy Plan

An increase in mining investments will be encouraged by the development and finalisation of a Mining Masterplan that should result in national priority sectors growing their contribution to GDP growth from the current 3% and exports increasing by 4% annually. Growth will further be encouraged by improving accessibility through improved response and turnaround times for mining rights applications and the processing of permits. In addition, transition plans will be finalised for the energy sector to improve the state of geological infrastructure. These interventions will be augmented by promotional efforts to attract investment to the sector.

Energy security will be encouraged by the establishment of an independent transmission company under Eskom Holdings. A Cabinet Proposal on the National Energy Regulator Bill to amend the NERSA governance structure will be completed in the short term and a Cabinet Proposal of the "end-state" electricity sector is anticipated in the second year of the MTF.

To address environmental outputs and targets, and to comply with environmental and climate obligations and aspirations, and economic growth and poverty alleviation imperatives, the implementation of IRP2019 is critical. Within the scope of this programme, the National Environmental Management Act (NEMA) and Specific Environmental Management Act (SEMA) will be amended to support the targeted performance improvements.

A framework for a just transition to a low carbon economy will be finalised in the first year of the MTSF followed by the development of an engagement framework for affected communities in year two. These milestones will inform the review, update and submission of a revised IEP in the fifth year of the MTSF. To enable injection of carbon and reduce emissions, climate change challenges prompt the just transition to a low-carbon economy for which the IRP2019 and the Socio-Economic Impact Assessment System (SEIAS) are crucial. The achievement of this outcome will be further enhanced by the implementation of strengthened stakeholder segmentation, a stakeholder targeting strategy, and a diplomacy framework that will be developed and implemented.

To mitigate competing land use, such as the Spatial Planning and Land Use Management Act (SPLUMA), agriculture, the Square Kilometre Array (SKA), and private land, an intergovernmental relations framework and policy position will be crafted and implemented with assistance from the Council for Geoscience (CGS).

Compliance with statistical and data commitments with national and international bodies and the quality of economic reports and data will be augmented by the development of enabling information technology infrastructure and by partnering with other departmental resources, mine economics, SSM and the South African Revenue Service (SARS). These should assist with resolving issues around the quality and availability of data and statistics.

Furthermore, synergies and alignment will be encouraged to foster greater cohesion to ensure the DMRE is in a better position to meet outputs in support of the department's outcomes. New partnerships will be implemented or developed and existing ones will be strengthened with SOEs, government organisations and social partners to grow investment potential in the mining and energy sectors.

5.3.4 Programme resource considerations

Programme 3: Mining, Minerals and Energy Policy Development (Sub-programmes)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Mining, Minerals and Energy Policy Development Management	31 153	28 146	22 432	28 239	28 239	28 178	29 814	31 125
Minerals and Petroleum Policy	37 966	28 680	34 608	34 754	30 447	33 102	35 135	37 486
Nuclear, Electricity and Gas Policy	11 447	11 129	14 066	18 570	18 554	20 998	22 227	23 417
Economic Analysis and Statistics	6 075	5 124	5 895	9 207	8 490	8 575	9 136	10 267
Economic Growth, Promotion and Global Relations	793 544	786 349	888 578	910 171	910 171	876 347	768 823	821 074
Minerals and Energy Planning	18 822	20 453	17 251	25 137	22 977	25 904	27 436	28 797
Total for Programmes	**899 007**	**879 881**	**982 830**	**1 026 078**	**1 018 878**	**993 104**	**892 571**	**952 166**

Programme 3: Mining, Minerals and Energy Policy Development Management (Economic Classification)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Current payments	**160 206**	**144 087**	**155 828**	**177 750**	**170 550**	**181 342**	**192 366**	**203 304**
Compensation of employees	**99 126**	**103 281**	**108 441**	**120 172**	**114 472**	**126 815**	**134 744**	**143 488**
Salaries and wages	87 442	91 103	95 633	105 103	99 391	111 280	118 239	125 912
Social contributions	11 684	12 178	12 808	15 069	15 081	15 535	16 505	17 576
Goods and services	**61 080**	**40 806**	**47 387**	**57 578**	**56 078**	**54 527**	**57 622**	**59 816**
Administrative fees	2 149	975	778	4 270	4 096	3 503	3 754	3 944

Programme 3: Mining, Minerals and Energy Policy Development Management (Economic Classification)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Advertising	3 328	5 691	931	4 327	4 368	3 347	3 379	3 326
Minor assets	1	4	-	109	109	115	121	126
Audit costs: External	-	-	70	-	-	-	-	-
Catering: Departmental activities	614	407	1 170	1 102	1 092	1 147	1 208	1 251
Communication (G&S)	2 648	890	2 091	1 326	1 089	1 398	1 474	1 534
Computer services	2 061	8	-	54	84	57	60	62
Consultants: Business and advisory services	5 754	3 019	354	9 486	8 248	9 641	10 184	10 581
Legal services (G&S)	296	8 134	10 699	300	483	305	322	334
Contractors	7	1 404	5 531	2 562	2 557	2 665	2 813	2 919
Agency and support/outsourced services	-	-	585	-	-	-	-	-
Fleet services (including government motor transport)	301	251	280	-	2	-	-	-
Consumable supplies	111	54	71	229	255	238	253	261
Consumables: Stationery, printing and office supplies	1 038	298	637	1 856	1 553	1 847	1 953	2 035
Operating leases	585	431	18	-	10	-	-	-
Rental and hiring	29	924	472	2 310	2 310	2 353	2 483	2 576
Transport provided: Departmental activity	180	-	-	-	-	-	-	-
Travel and subsistence	16 398	11 417	13 001	16 829	16 892	15 509	16 476	17 197
Training and development	244	269	282	939	939	888	942	979
Operating payments	20 704	7 334	3 616	7 816	7 837	7 446	7 897	8 216
Venues and facilities	4 632	(704)	6 801	4 063	4 154	4 068	4 303	4 475
Transfers and subsidies	**738 248**	**735 087**	**826 926**	**848 234**	**848 234**	**811 663**	**700 101**	**748 751**

Programme 3: Mining, Minerals and Energy Policy Development Management (Economic Classification)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Departmental agencies and accounts	378 598	366 988	405 983	414 062	414 062	499 765	371 434	407 858
Foreign governments and international organisations	3 034	842	559	782	782	825	870	912
Public corporations	356 616	367 256	420 368	433 390	433 390	311 073	327 797	339 981
Households		1	16	-	-	-	-	-
Payments for capital assets	**526**	**707**	**45**	**94**	**94**	**99**	**104**	**111**
Transport equipment	-	-	-	-	-	-	-	-
Other machinery and equipment	526	707	45	94	94	99	104	111
Software and other intangible assets	-	-	-	-	-	-	-	-
Payments for financial assets	**27**	**-**	**31**	**-**	**-**	**-**	**-**	**-**
Total economic classification	**899 007**	**879 881**	**982 830**	**1 026 078**	**1 018 878**	**993 104**	**892 571**	**952 166**

Programme 3: Mining, Minerals and Energy Policy Development Management (Transfer Payments)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Beneficiary	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Employee social benefits	-	1	16	-	-	-	-	-
International Energy Forum	3 034	275	-	-	-	-	-	-
Generation IV International Forum	-	567	559	782	782	825	870	912
MINTEK	315 152	310 705	319 213	370 208	370 208	276 768	291 605	302 443
MINTEK	41 264	56 551	31 155	63 182	63 182	34 305	36 192	37 538
Council for Geoscience	341 708	330 574	311 613	410 553	410 553	496 063	367 528	407 858
Council for Geoscience	36 890	35 414	3 323	3 509	3 509	3 702	3 906	-
MINTEK: Expanded Public Works Programme	-	-	-	-	-	-	-	-
State Diamond Trader	200	-	-	-	-	-	-	-
Council for Geoscience: Economic competitiveness and support package	-	-	90 000	-	-	-	-	-
MINTEK: Economic competitiveness and support package	-	-	70 000	-	-	-	-	-
Council for Geoscience: Expanded Public Works Programme	-	1 000	1 047	-	-	-	-	-
Total	**738 248**	**735 087**	**826 926**	**848 234**	**848 234**	**811 663**	**700 101**	**748 751**

5.4 Programme 4: Mine Health and Safety Inspectorate (MHSI)

Purpose: Ensure health and safety of employees in the mines

Functions:

- Promote health and safety
- Contribute to skills development and transformation
- Implement Service Level Agreements (SLAs)
- Develop and review internal processes
- Improve turnaround times
- Promote corporate governance

The MHSI strives towards a safe and healthy mining industry. This is to be achieved by reducing mining related deaths, injuries and ill health through the formulation of national policy and legislation, the provision of advice, and the application of systems that monitor and enforce compliance with the law in the mining sector.

Link to the Balanced Scorecard Framework

This programme supports the Policy and Regulatory Perspective of the BSC as it relates to:

- Regulatory processes
- Industry – safety of women
- Trade and investment

MTSF alignment

The MHSI is dedicated to matching the 7 National Priorities where it is capable. The decent employment through inclusive growth outcome of the Programme supports MTSF Priorities 1, 2, and 4.

5.4.1 Outcomes, outputs, performance indicators and targets

Outcome	Outputs	Output indicators	Annual targets						
			Audited/Actual performance			Estimated performance	MTEF period		
			2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Improved and streamlined regulatory, service delivery, operational, health and safety processes and collaboration across regulators and relevant role players	% improvement in mine health and safety parameters	% reduction in occupational fatalities	10%	10%	10%	10%	10%	10%	10%
		% reduction in occupational injuries	5%	5%	5%	5%	5%	5%	5%
		% reduction in occupational diseases (Including TB)	10%	10%	10%	10%	10%	10%	10%
		% of investigations completed (Initiated vs Completed)	80%	80%	80%	80%	80%	80%	80%
		% of inquiries completed (Initiated vs completed)	80%	80%	80%	80%	80%	80%	80%
		Number of qualitative inspections conducted (cumulative)	8 000	8 000	8 000	8 000	8 000	8 000	8 000

5.4.2 Output indicators: Annual and quarterly targets

Output indicators	Annual targets	Q1	Q2	Q3	Q4
% reduction in occupational fatalities	10%	10%	10%	10%	10%
% reduction in occupational injuries	5%	5%	5%	5%	5%
% reduction in occupational diseases (Including TB)	10%	10%	10%	10%	10%
% of investigations completed (Initiated vs Completed)	80%	80%	80%	80%	80%
% of inquiries completed (Initiated vs Completed)	80%	80%	80%	80%	80%
Number of qualitative inspections conducted (cumulative)	8 000	2 000	2 000	2 000	2 000

5.4.3 Explanation of planned performance over the medium-term period

The outputs of this programme will be achieved by promoting health and safety and contributing to skills development and transformation. Pursuing an efficient, effective and development oriented public service, and empowering, fair and inclusive citizenship, will assist with establishing improved and streamlined regulatory, service delivery, operational, health and safety processes and collaboration across regulators and relevant role players. This will be achieved by promoting corporate governance and improving turnaround times. MHSI's economic transformation and job creation focus promotes health and safety through the implementation of the OHS Improvement Strategy. The inspectorate engages continuously with mine management and executives and analyses the outcomes of inspection and audits. In addition, it conducts OHS imbizos and campaigns as required.

Other initiatives include the promotion and implementation of the OHS small-scale guidelines, dissemination of OHS information, and the implementation of the Enforcement Manual for Inspectors and Legal Framework. The review inspections and audit tools will be improved, and major accidents will be analysed to improve investigations. Further initiatives include the development of annual regional inspection plans, conducting qualitative inspections, and planning and conducting workshops.

5.4.4 Programme resource considerations

Programme 4: Mine Health and Safety Inspectorate (Sub-programmes)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Mine Health and Safety Management	35 869	40 934	40 535	56 593	59 793	55 960	63 994	66 425
Mine Health and Safety Regions	143 127	152 482	156 595	148 711	148 711	159 469	169 601	175 956
Occupational Health	12 277	11 959	13 200	15 262	16 262	17 265	18 403	19 093
Total for Programmes	**191 273**	**205 375**	**210 330**	**220 566**	**224 766**	**232 694**	**251 998**	**261 474**

Programme 4: Mine Health and Safety Inspectorate (Economic Classification)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Current payments	**188 377**	**196 108**	**203 119**	**213 414**	**217 614**	**229 434**	**244 124**	**253 271**
Compensation of employees	**158 029**	**165 879**	**171 111**	**178 335**	**182 535**	**192 426**	**205 083**	**212 770**
Salaries and wages	139 666	146 398	150 612	156 628	160 828	168 855	179 962	186 706
Social contributions	18 363	19 481	20 499	21 707	21 707	23 571	25 121	26 064
Goods and services	**30 348**	**30 229**	**32 008**	**35 079**	**35 079**	**37 008**	**39 041**	**40 501**
Administrative fees	207	220	261	480	480	505	534	557
Advertising	69	-	-	243	243	256	270	280
Minor assets	13	22	10	80	80	84	89	92
Catering: Departmental activities	42	238	27	186	186	197	207	215
Communication (G&S)	2 874	532	1 083	1 247	1 247	1 321	1 393	1 445
Computer services	-	-	40	950	950	995	1 049	1 088

Programme 4: Mine Health and Safety Inspectorate (Economic Classification)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Consultants: Business and advisory services	1 375	469	263	2 159	2 159	2 260	2 385	2 474
Legal services (G&S)	506	749	676	900	900	949	1 002	1 039
Contractors	207	174	141	277	277	293	308	319
Entertainment	-	-	-	5	5	5	5	5
Fleet services (including government motor transport)	269	318	377	3 196	3 196	3 378	3 563	3 696
Inventory: Food and food supplies	-	-	-	2	2	2	2	2
Consumable supplies	434	454	452	596	596	627	661	686
Consumables: Stationery, printing and office supplies	879	650	786	2 332	2 332	2 459	2 594	2 691
Operating leases	37	44	35	30	30	32	33	34
Rental and hiring	-	-	-	6	6	6	7	7
Travel and subsistence	22 700	25 813	27 027	20 292	20 292	21 432	22 610	23 455
Training and development	230	176	407	825	825	869	918	952
Operating payments	337	254	375	523	523	548	578	600
Venues and facilities	169	116	48	750	750	790	833	864
Transfers and subsidies	**1 716**	**7 880**	**6 656**	**6 382**	**6 382**	**2 448**	**7 017**	**7 297**
Departmental agencies and accounts	1 716	7 880	6 656	6 382	6 382	2 448	7 017	7 297
Payments for capital assets	**280**	**1 387**	**93**	**770**	**770**	**812**	**857**	**906**
Transport equipment	-	-	-	-	-	-	-	-
Other machinery and equipment	280	1 387	93	770	770	812	857	906
Software and other intangible assets	-	-	-	-	-	-	-	-
Payments for financial assets	**900**	**-**	**462**	**-**	**-**	**-**	**-**	**-**
Total economic classification	**191 273**	**205 375**	**210 330**	**220 566**	**224 766**	**232 694**	**251 998**	**261 474**

Programme 4: Mine Health and Safety Inspectorate (Transfer Payments)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Beneficiary	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Mine Health and Safety Council	-	6 162	4 803	4 386	4 386	344	4 777	4 973
Mining Qualifications Authority	1 716	1 718	1 853	1 996	1 996	2 104	2 240	2 324
Total	**1 716**	**7 880**	**6 656**	**6 382**	**6 382**	**2 448**	**7 017**	**7 297**

5.5 Programme 5: Programmes and Projects

Purpose: To manage, coordinate and monitor Energy and Minerals Programmes and Projects

Functions:

- Oversee the National Electrification Programme
- Ensure management of programmes and projects function
- Oversee programme and projects focused on the development, improvement, transformation of electricity generation, transmission and distribution
- Provide strategic guidance on environmental management and climate change
- Advance energy efficiency across all sectors
- Ensure integration of renewable energy initiatives into mainstream energy supply in South Africa

Link to Balanced Scorecard

The Programme and Projects Programme links to different perspectives of the BSC:

- Governance and Financial Perspective with regards to secure funding for strategic projects
- Policy and Regulatory Perspective relating to service delivery
- Stakeholder Perspective as it relates to infrastructure and energy availability
- Economic Perspective linking to economic transformation and job creation and transformed, diversified and sustainable minerals and energy sectors

MTSF alignment

The Programmes and Projects Branch responds to the MTSF Priorities through several interventions. The deliverables of this branch will enhance access to affordable energy, increased investment in energy infrastructure through electrification, energy efficiency and demand side management initiatives and small-scale renewable energy initiatives. Industrialisation through the development of the Regional Energy Masterplan, Renewable Energy Sector Master Plan, and economic growth and job creation through energy projects and small-scale mining. This applies to Integrated Energy Centres (IeCs), and women and youth empowerment programmes in the energy and mining sectors.

5.5.1 Outcomes, outputs, performance indicators and targets

Outcome	Outputs	Output indicators	Annual targets						
			Audited/Actual performance			Estimated performance	MTEF period		
			2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Supply of electricity secured	Increased energy security	Additional megawatts commissioned Increased electricity reserve margin Increased share of alternative energy sources	N/A	N/A	N/A	N/A	Emergency power contracting (Power Purchase Agreements in place)	Emergency power brought online based on available capacity and affordability	2 600 MW from renewable energy and 513 MW of storage brought online in line with IRP2019
Improved energy efficiency across all sectors	Energy savings verified and quantified	Number of energy savings realised and verified from EEDSM projects	Verified energy savings from EEDSM initiatives	0.5 TWh of energy savings realised and verified from EEDSM projects	Provide oversight on the achievement of 0.5 TWh and the funding of this target	0.5 TWh of energy savings realised and verified from EEDSM projects	0.5 TWh savings realised and verified from EEDSM projects	0.5 TWh savings realised and verified from EEDSM projects	0.5 TWh savings realised and verified from EEDSM projects
			N/A	N/A	N/A	N/A	Energy consumption baselines from 15 new additional municipalities	Energy consumption baselines from 15 new additional municipalities	Energy consumption baselines from 15 new additional municipalities
		National Energy Efficiency Strategy for economy-wide developed	N/A	N/A	N/A	N/A	Reviewed post-2015 National Energy Efficiency Strategy	Analysis report of energy consumption of 4 (of 8) sectors developed	Energy savings potentials and measures of 4 (of 8) sectors developed

Outcome	Outputs	Output indicators	Annual targets						
			Audited/Actual performance			Estimated performance	MTEF period		
			2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Renewable energy deployment integrated into energy supply	Improved access to hot water for poor households	No. of SWHs installed quarterly in beneficiary households in participating municipalities	Completed Solar Water Heating Implementation Plan	Procure about 50 000 baseline systems with a local content exceeding 70%	Increase the number of procured baseline systems in line with budget allocation; target youth trained under accredited programmes to install the systems at target municipalities	Report on roll-out of 87 000 procured SWH baseline systems in 19 municipalities	4 Quarterly Reports on installation of 87 000 procured SWH baseline systems in 18 municipalities	4 Quarterly Reports on the roll out of SWH in approved municipalities (i.e. based allocated budget)	4 Quarterly Reports on roll-out of SWH in approved municipalities (i.e. based allocated budget)
	Effective deployment of renewable energy	Renewable Energy (RE) Sector Master Plan developed	N/A	N/A	N/A	N/A	Renewable Energy (RE) Sector Master Plan finalised	1 Report on the implementation on RE Sector Master Plan	1 Report on the implementation on RE Sector Master Plan
		Number of quarterly reports on Verified Wind Atlas 3 for South Africa (WASA)	N/A	N/A	N/A	N/A	1 WASA 3 Results Report developed	1 Synthesis report on the implementation SAWEP (Phase 1, 2, and 3)	N/A

Outcome	Outputs	Output indicators	Annual targets						
			Audited/Actual performance			Estimated performance	MTEF period		
			2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Improve capacity to deliver basic services	Households electrified through grid connection	Number of Quarterly Reports on the allocation of funding and the monitoring of implementation of grid electrification of additional households by Eskom and municipalities	235 000	235 000	200 000	4 Quarterly Reports on the allocation of funding and the monitoring of implementation of grid electrification of additional households by Eskom and municipalities	4 Quarterly Reports on the allocation of funding and the monitoring of implementation of grid electrification of additional households by Eskom and municipalities	4 Quarterly Reports on the allocation of funding and the monitoring of implementation of grid electrification of additional households by Eskom and municipalities	4 Quarterly Reports on the allocation of funding and the monitoring of implementation of grid electrification of additional households by Eskom and municipalities
		No. of households electrified through non-grid connection	20 000	20 000	15 000	20 000 additional households electrified through non-grid electricity	15 000 additional households electrified through non-grid electricity	15 000 additional households electrified through non-grid electricity	15 000 additional households electrified through non-grid electricity
State of geological infrastructure improved Improve capacity to deliver basic services	AMD mitigated	Number of strategies developed for AMD mitigation	N/A	N/A	N/A	1 strategy developed	1 strategy developed	1 strategy developed	1 strategy developed
		Number of mine water/ wastewater management plans implemented	N/A	N/A	N/A	N/A	1	1	1

5.2.2 Output indicators: Annual and quarterly targets

Output indicators	Annual targets	Q1	Q2	Q3	Q4
Additional megawatts commissioned Increased electricity reserve margin Increased share of alternative energy sources	Emergency Power Contracting (Power Purchase Agreements in place)	Finalise and release Request for Procurement of new generation capacity in line with Section 34 Determination for Emergency Power	N/A	Finalise and release Request for Procurement of new generation capacity in line with Section 34 Determination for long-term power	Emergency Power Contracting (Power Purchase Agreements in place)
Number of strategies developed for AMD Mitigation	1 strategy implemented	-	-	-	1 strategy developed
Number of mine water/ wastewater management plans implemented	1	-	-	-	1
Number of Quarterly Reports on the allocation of funding and the monitoring of implementation of grid electrification of additional households by Eskom and municipalities	4 Quarterly Reports on the allocation of funding and the monitoring of implementation of grid electrification of additional households by Eskom and municipalities	1 Quarterly Reports on the allocation of funding and the monitoring of implementation of grid electrification of additional households by Eskom and municipalities	1 Quarterly Reports on the allocation of funding and the monitoring of implementation of grid electrification of additional households by Eskom and municipalities	1 Quarterly Reports on the allocation of funding and the monitoring of implementation of grid electrification of additional households by Eskom and municipalities	1 Quarterly Reports on the allocation of funding and the monitoring of implementation of grid electrification of additional households by Eskom and municipalities
No. of households electrified through non-grid connection	15 000 additional households electrified through non-grid electricity	Conclude allocations and contracting with service providers in line with allocations and budget	2 000 additional households electrified through non-grid electricity	5 000 additional households electrified through non-grid electricity	8 000 additional households electrified through non-grid electricity

Output indicators	Annual targets	Q1	Q2	Q3	Q4
Number TWh savings realised and verified from EEDSM projects	0.5 TWh savings realised and verified from EEDSM projects	Report on the number of EEDSM projects identified	Report on the energy savings (TWh) to be achieved from the identified EEDSM projects	Progress report on the implementation of the identified EEDSM projects and achieved savings	Quantification of energy savings achieved from municipal EEDSM projects 0.5 TWh savings realised and verified from EEDSM projects
Number of quarterly reports on energy consumption baselines from 15 additional municipalities developed	4 Quarterly Reports on Energy consumption baselines from 15 additional municipalities developed	Report on the consultation with identified 15 additional municipalities	Report on the number of energy consumption baselines	Report on the number of energy consumption baselines	Report on the development of energy consumption baselines from 15 additional municipalities
National Energy Efficiency Strategy for economy-wide sector developed	Final Draft 2015 NEES submitted for Cabinet consideration	Submission of 2015 National Energy Efficiency Strategy draft document	N/A	N/A	Final Draft 2015 NEES submitted for Cabinet consideration
Number of reports on installed SWHs in beneficiary households in participating municipalities	4 Quarterly Reports on installation of 87 000 procured SWH baseline systems in 18 municipalities	1 Quarterly Report on installation of 87 000 procured SWH baseline systems in 18 municipalities	1 Quarterly Report on installation of 87 000 procured SWH baseline systems in 18 municipalities	1 Quarterly Report on installation of 87 000 procured SWH baseline systems in 18 municipalities	1 Quarterly Report on installation of 87 000 procured SWH baseline systems in 18 municipalities
Renewable Energy (RE) Sector Masterplan developed	Renewable Energy (RE) Sector Masterplan developed	Terms of Reference (ToRs) for the RE Sector Masterplan finalised	N/A	N/A	Renewable Energy (RE) Sector Masterplan Report developed
	1 WASA 3 Results Report developed	Report on measurement parameters for respective (4) measurements stations	Report on measurement parameters for respective (4) WASA measurements stations	Report on measurement parameters for respective (4) measurements stations	1 WASA 3 Results Report developed

5.5.3 Explanation of planned performance over the medium-term period

The Programmes and Projects Branch will pursue effective implementation, in line with the project management framework. The effective tools to enable project implementation, monitoring and evaluation, such as the information management system, will be pursued to ensure that the Project Management Office is capacitated and operational in year 2 of the MTSF period. This functionality is a critical dependency in ensuring that the IRP2019 technologies are scoped and project managed to achieve the outputs translating to increased investment, increased energy availability factor, increased electricity reserve margin, additional MW commissioned and access to alternative energy sources.

The various energy interventions incorporated in the IRP2019 will lead to improved energy infrastructure and increased access to more affordable energy. Affordable energy will be enabled by a streamlined regulatory environment. To this extent, and to further improve energy security, the Programmes and Projects Branch will direct efforts in the first year of the MTSF at interventions in the form of expediting Power Purchase Agreements.

The Programmes and Projects Branch will oversee the implementation of the Energy Efficiency and Demand Side Management Programme (EEDSM) that supports municipalities with the primary objective of reducing electricity consumption in municipal infrastructure.

The EEDSM initiative is efficiency technology-based and ranges from lighting (retrofitting of street, traffic and building lighting and enhancing efficiency) in waste and wastewater pumping systems to coupling both renewable and energy efficiency through the Budget Support Programme. The reduction of electricity consumption by municipalities is not only critical in light of the amount of electricity the municipalities utilise in providing basic services but also provides opportunities to create jobs and reduce emissions.

In addition, the roll-out on the Solar Water Heater Programme in various municipalities remains one of the national programmes overseen by the branch which also has the potential to create jobs, build skills capacity and strengthen solar manufacturing capacity in the country.

The Programmes and Projects Branch will focus on the development of supporting strategies to improve the state of geological infrastructure. These include the development of a strategy for acid mining drainage (AMD) mitigation and the implementation of mine water/wastewater management plans.

The Project Management Office will be key for integrating functions, resources, joint working frameworks, procurement, etc., to create synergies across the department, its entities and external parties, through participation in joined-up plans to optimise the use of resources and to direct and mobilise funding in the priority energy and mining investment areas.

5.5.4 Programme resource considerations

Programme 5: Mineral and Energy Resources Programmes and Projects (Sub-programmes)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Programmes and Projects Management	2 410	1 864	2 287	5 058	5 058	3 656	3 871	4 088
Integrated National Electrification Programme	5 630 619	6 111 174	5 320 997	5 484 630	5 234 630	5 116 465	5 258 378	6 075 947
Programmes and Projects Management Office	38 434	29 911	33 348	53 852	50 852	66 641	70 365	71 563
Regional Programmes and Projects Management Office	19 650	18 271	20 174	20 947	20 947	22 103	23 424	26 172
Electricity Infrastructure and Industry Transformation	5 573	8 413	6 060	6 906	6 906	9 134	9 676	10 227
Energy Efficiency Projects	527 139	537 514	344 775	318 911	318 911	326 143	344 038	360 707
Renewable Energy Projects	25 240	64 204	75 824	80 070	80 070	85 736	90 483	94 892
Environmental Management Projects	9 438	16 795	11 015	23 564	23 564	168 237	177 450	186 089
Total for Programmes	**6 258 503**	**6 788 146**	**5 814 480**	**5 993 938**	**5 740 938**	**5 798 115**	**5 977 685**	**6 829 685**

Programme 5: Mineral and Energy Resources Programmes and Projects (Economic Classification)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Current payments	**119 172**	**196 291**	**226 362**	**205 899**	**205 899**	**240 686**	**244 732**	**256 368**
Compensation of employees	**75 606**	**76 704**	**83 482**	**91 729**	**91 729**	**103 947**	**109 788**	**116 947**
Salaries and wages	66 612	67 483	73 415	80 936	80 895	91 216	96 339	102 620
Social contributions	8 994	9 221	10 067	10 793	10 834	12 731	13 449	14 327
Goods and services	**43 566**	**119 587**	**142 880**	**114 170**	**114 170**	**136 739**	**134 944**	**139 421**
Administrative fees	1 557	1 124	732	1 342	1 154	1 473	1 548	1 609

Programme 5: Mineral and Energy Resources Programmes and Projects (Economic Classification)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Advertising	3 457	145	179	1 015	275	1 099	1 160	1 207
Minor assets	-	-	14	19	19	20	22	23
Bursaries: Employees	-	-	-	-	324	-	-	-
Catering: Departmental activities	1 783	1 159	1 307	1 058	1 327	1 072	1 132	1 181
Communication (G&S)	1 230	722	790	992	862	1 080	1 141	1 187
Computer services	-	-	-	-	-	3 199	3 253	1 233
Consultants: Business and advisory services	7 819	742	7 274	80 054	69 605	93 629	89 571	92 012
Legal services (G&S)	359	-	-	-	-	-	-	-
Contractors	656	2 987	4 386	25	10 164	3 132	3 304	3 432
Agency and support/outsourced services	1 100	-	-	10 063	-	10 616	11 200	11 614
Fleet services (including government motor transport)	546	416	240	30	47	32	34	36
Inventory: Clothing material and accessories	-	-	-	-	1	-	-	-
Consumable supplies	279	72	270	270	335	292	309	324
Consumables: Stationery, printing and office supplies	385	189	161	587	405	805	848	887
Operating leases	839	686	253	-	29	-	-	-
Rental and hiring	-	46	14	-	56	150	158	164
Property payments	24	-	-	-	-	-	-	-
Transport provided: Departmental activity	114	73	41	-	92	-	-	-
Travel and subsistence	16 231	12 385	14 624	14 955	14 054	15 296	16 146	19 157
Training and development	8	63	86	100	100	134	141	148
Operating payments	1 057	89 324	110 378	359	12 672	382	404	423
Venues and facilities	6 122	9 454	2 131	3 301	2 649	4 328	4 573	4 784
Transfers and subsidies	**6 139 135**	**6 591 660**	**5 588 106**	**5 787 961**	**5 534 961**	**5 557 347**	**5 732 866**	**6 573 224**

Programme 5: Mineral and Energy Resources Programmes and Projects (Economic Classification)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Municipalities	2 131 871	2 290 284	2 119 501	2 090 393	2 090 393	2 076 746	2 233 140	2 361 959
Departmental agencies and accounts	20 625	59 774	70 241	74 151	74 151	99 375	104 841	109 628
Foreign governments and international organisations	2 216	1 015	1 527	2 902	2 902	3 062	3 231	3 354
Public corporations	3 846 648	4 081 626	3 262 031	3 401 368	3 148 368	3 151 471	3 152 494	3 852 634
Private enterprises	137 733	158 960	134 555	219 147	219 147	226 693	239 160	245 649
Households	42	1	251	-	-	-	-	-
Payments for capital assets	**147**	**195**	**12**	**78**	**78**	**82**	**87**	**93**
Transport equipment	-	-	-	-	-	-	-	-
Machinery and equipment	147	195	12	78	78	82	87	93
Software and other intangible assets	-	-	-	-	-	-	-	-
Payments for financial assets	**49**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Total economic classification	**6 258 503**	**6 788 146**	**5 814 480**	**5 993 938**	**5 740 938**	**5 798 115**	**5 977 685**	**6 829 685**

Programme 5: Mineral and Energy Resources Programmes and Projects (Transfer Payments)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Beneficiary	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
INEP - Non-grid Electrification Projects	137 733	158 960	134 555	212 941	212 941	220 160	232 269	238 502
INEP Eskom Grant	3 526 334	3 846 154	3 262 031	3 374 053	3 124 053	3 001 483	2 994 257	3 688 162
INEP Municipal Grant	1 946 246	2 087 048	1 904 477	1 863 328	1 863 328	1 858 752	2 003 157	2 118 668
Employee social benefits	42	1	251	-	-	-	-	-
South African National Energy Development Institute	20 625	59 774	70 241	74 151	74 151	78 215	82 517	86 478
Various institutions: Solar Water Heater Project	320 314	235 472	-	-	-	-	-	-
International Renewable Energy Agency	2 216	1 015	1 177	1 201	1 201	1 267	1 337	1 401
International Energy Forum	-	-	350	356	356	376	397	416
International Partnership for Energy Efficiency Cooperation	-	-	-	1 345	1 345	1 419	1 497	1 537
Energy efficiency and demand side management grant	185 625	203 236	215 024	227 065	227 065	217 994	229 983	243 291
Industrial Development Corporation	-	-	-	24 683	21 683	25 924	27 350	28 720
Various institutions: Water management solutions subsidies for marginal mines	-	-	-	6 206	6 206	6 533	6 891	7 147
Council for Geoscience						21 160	22 324	23 150
MINTEK: Expanded public works programme	-	-	-	2 632	2 632	2 775	2 927	3 036
MINTEK						121 289	127 960	132 716
Total	**6 139 135**	**6 591 660**	**5 588 106**	**5 787 961**	**5 534 961**	**5 557 347**	**5 732 866**	**6 573 224**

5.6 Programme 6: Nuclear

Purpose: To manage the South African nuclear energy industry and control nuclear material in terms of international obligations, nuclear legislation and policies to ensure the peaceful use of nuclear energy

Functions:

- Manage and implement all matters relating to nuclear safety and technology, as required by legislation and international agreements
- Manage and implement all matters related to nuclear non-proliferation and radiation security as required by legislation and international agreements

Link to Balanced Scorecard

This Programme links to the Policy and Regulatory Perspective in respect of Policy, Research, Technology, and Innovation; and Regulatory in terms of operational service delivery and nuclear health and safety processes. The link to the Stakeholder Perspective relates to infrastructure investment and development.

MTSF alignment

The Nuclear Programme aims to address the challenge of inadequate security of supply of electricity highlighted in the MTSF. Self-sufficiency in the utilisation of nuclear technology in the entire nuclear value chain, improved security of energy supply, utilisation of nuclear technology and improved nuclear security will respond to the requirement to secure the supply of energy. In addition, the Nuclear Branch aims to promote nuclear energy as an important electricity supply option through the establishment of a national industrial capability for the design, manufacture and construction of nuclear energy systems.

The Nuclear Energy Policy will establish the necessary governance structures for a nuclear new build programme; create a framework for safe and secure utilisation of nuclear energy with minimal environmental impact; contribute to the country's national programme of social and economic transformation, growth and development; guide in the actions to develop, promote, support, enhance, sustain and monitor the nuclear energy sector in South Africa; exercise control over unprocessed uranium ore for export purposes for the benefit of the South African economy; establish mechanisms to ensure the availability of land (nuclear sites) for future nuclear power generation; allow for the participation of public entities in the uranium value chain; improve the quality of human life; support the advancement of science and technology; reduce greenhouse gas emissions; and play an active role in the skills development related to nuclear energy.

5.6.1 Outcomes, outputs, performance indicators and targets

Outcome	Outputs	Output indicators	Annual targets						
			Audited/Actual performance			Estimated performance	MTEF period		
			2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Supply of electricity secured	Continuous supply of electricity for grid stability	Additional 2 500 MW nuclear energy procured by 2024	N/A	N/A	N/A	N/A	Roadmap for implementation of the 2 500 MW nuclear programme developed	Roadmap for 2 500 MW Nuclear New Build Programme developed and implemented	Procurement framework for the 2 500 MW nuclear programme developed
	Policy guideline and support for the Plant Life Extension Programme developed	Number of quarterly reports on Koeberg Nuclear Power Plant life extension	N/A	N/A	N/A	N/A	Quarterly Monitoring Report of Koeberg's Plant Life Extension Plan through established Technical Oversight Committee meetings	Quarterly Monitoring Reports of Koeberg's Plant Life Extension Plan through established Technical Oversight Committee meetings	Quarterly Monitoring Reports of Koeberg's Plant Life Extension Plan through established Technical Oversight Committee meetings
	Policy oversight and direction for the establishment of the CISF Project	Pre-feasibility Report submitted to Cabinet for approval to establish the CISF	N/A	N/A	N/A	N/A	Pre-feasibility Report submitted to Cabinet for approval to establish the CISF	Exercise oversight on completion of the Pre-feasibility Report and submission to Cabinet	Exercise oversight on securing of funding for CISF by NRWDI, and commencement of the EIA and siting processes
	New Multi-Purpose Reactor procured by 2024	New Multi-Purpose Reactor procured by 2024	N/A	N/A	N/A	N/A	Pre-feasibility study submitted to approval authority	Coordinate and exercise oversight on the procurement of Multi-Purpose Reactor	Exercise oversight on implementation of the Multi-Purpose Reactor procurement

Outcome	Outputs	Output indicators	Annual targets						
			Audited/Actual performance			Estimated performance	MTEF period		
			2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Supply of electricity secured	Issued authorisations or denials	70% of authorisation applications processed within the 8-week time period.	74.11%	72%	78%	70% of authorisation applications processed within the 8-week time period	70% of authorisation applications processed within the 8-week time period	70% of authorisation applications processed within the 8-week time period	70% of authorisation applications processed within the 8-week time period
	Promulgated regulation on Physical Protective Measures for Nuclear Material	Developed Regulation on Physical Protective Measures for Nuclear Material.	N/A	N/A	N/A	N/A	Submission of the draft regulation on Physical Protective Measures for Nuclear Material to the Minister for public consultation	Promulgation of regulation on Physical Protective Measures for Nuclear Material	

5.6.2 Output indicators: Annual and quarterly targets

Output indicators	Annual targets	Q1	Q2	Q3	Q4
Additional 2 500 MW nuclear energy procured	Roadmap for implementation of the 2500 MW nuclear programme developed	1st Draft Framework for implementation of the 2 500 MW nuclear programme developed	Final Draft Governance Framework for the 2 500 MW nuclear programme developed	Implementation Strategy for the 2 500 MW nuclear programme developed	Draft Roadmap for implementation of the 2 500 MW nuclear programme developed
Number of quarterly reports on Koeberg Nuclear Power Plant life extension	4 Quarterly Reports on the monitoring of Koeberg's Plant Life Extension Plan through established Technical Oversight Committee meetings	Quarterly Report on the monitoring of Koeberg's Plant Life Extension Plan through established Technical Oversight Committee meetings	Quarterly Report on the monitoring of Koeberg's Plant Life Extension Plan through established Technical Oversight Committee meetings	Quarterly Report on the monitoring of Koeberg's Plant Life Extension Plan through established Technical Oversight Committee meetings	Quarterly Report on the monitoring of Koeberg's Plant Life Extension Plan through established Technical Oversight Committee meetings
Pre-feasibility Report on the procured Centralised Interim Storage Facility (CISF)	Pre-feasibility Report submitted to Cabinet for approval to establish the CISF	Draft Pre-feasibility Report on CISF	Pre-feasibility Report reviewed by the Steering Committee on CISF	Pre-feasibility Report on CISF finalised	Pre-feasibility Report submitted to Cabinet for approval to establish the CISF
New Multi-Purpose Reactor procured	Pre-feasibility study on Multi-Purpose Reactor submitted for approval	Pre-feasibility study report drafted	Pre-feasibility study report reviewed	Pre-feasibility study report revised	Pre-feasibility study report submitted for approval
% of authorisation applications processed within the 8-week time period	70% of authorisation applications processed within the 8-week time period	70% of authorisation applications processed within the 8-week time period	70% of authorisation applications processed within the 8-week time period	70% of authorisation applications processed within the 8-week time period	70% of authorisation applications processed within the 8-week time period
Draft Regulations on Physical Protective Measures for Nuclear Material	Submission of the draft regulations on Physical Protective Measures for Nuclear Material to the Minister for Public consultation	Draft regulation in place	Consultation with relevant stakeholders on the draft regulations	Consultation with DPME for SEIAS process	Submission of the draft regulations on Physical Protective Measures for Nuclear Material to the Minister for public consultation

5.6.3 Explanation of planned performance over the medium-term period

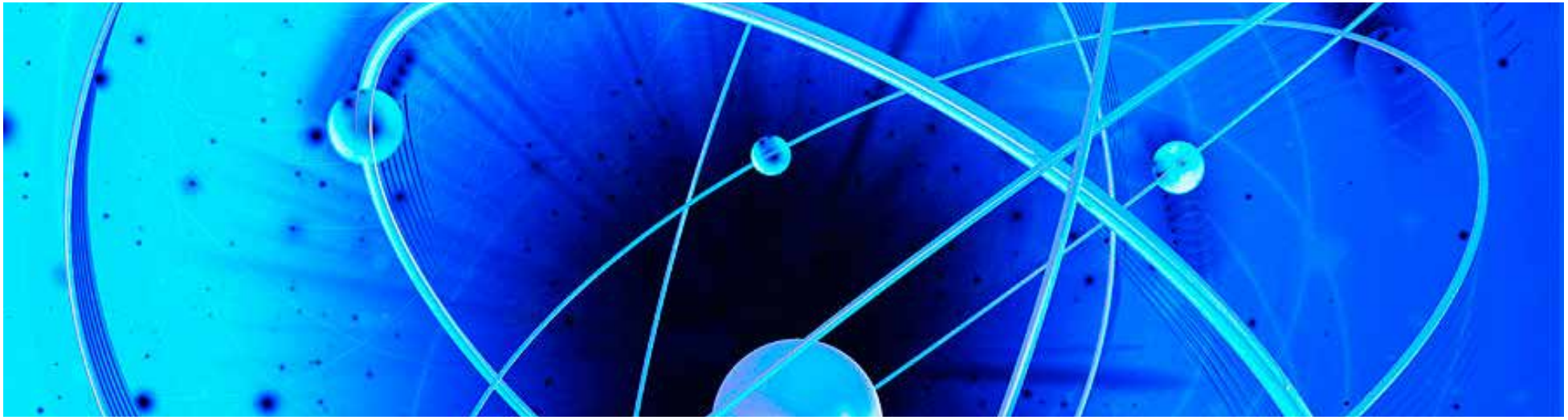
A policy decision on investment must be committed for a Nuclear New Build Programme (NNBP) to the extent of a 2 500 MW and Multi-Purpose Reactor. This Multi-Purpose Reactor will replace SAFARI-1 by 2030. The Ministerial Section 34 Determination for Nuclear Procurement Plan will be used, and a Request for Information (RFI) will be issued to test the market for both the Nuclear New Build Programme and Multi-Purpose Reactor. The 2 500 MW Nuclear New Build Programme will be procured in modular plants – at a pace and scale the country can afford – to ensure the security of energy supply. The Governance Framework for the coordination of the Nuclear New Build Programme and Multi-Purpose Reactor will be finalised in year 1 of the MTSF period and includes developing a framework for the Nuclear New Build Programme implementation, as well as a procurement framework for the Nuclear New Build Programme and Multi-Purpose Reactor. To improve nuclear safety, liabilities and emergency management a pre-feasibility study will commence in the first year of the MTSF for the procurement of a Centralised Interim Storage Facility.

The Koeberg NPP's design life will be extended to 2044 by facilitating the IAEA SALTO mission, and providing policy guidance as well as granting relevant authorisations. This falls beyond the MTSF period but key milestones will be targeted in the 5-year period to ensure readiness.

There is a need to make operational the National Liaison Office within the Nuclear Branch as a strategic interface and for coordination of technical cooperation projects for International Atomic Energy Agency and regional projects with AFRA.

To ensure peaceful applications of nuclear energy, authorisations or denials are issued for nuclear material, related equipment and nuclear technology.

Regulations on physical protective measures for nuclear material will be promulgated to strengthen nuclear security measures for the nuclear industry and related institutions.



5.6.4 Programme resource considerations

Programme 6: Nuclear Energy Regulation and Management (Sub-programmes)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Nuclear Energy Management	4 404	4 684	3 263	3 592	3 592	3 784	4 006	4 230
Nuclear Safety and Technology	859 003	780 819	857 728	1 026 198	1 025 429	1 081 511	1 140 401	1 183 202
Nuclear Non-Proliferation and Radiation Security	8 303	8 414	9 015	9 515	9 515	10 764	11 408	12 061
Total for Programmes	**871 710**	**793 917**	**870 006**	**1 039 305**	**1 038 536**	**1 096 059**	**1 155 815**	**1 199 493**

Programme 6: Nuclear Energy Regulation and Management (Economic Classification)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Current payments	**103 305**	**38 482**	**54 485**	**35 523**	**34 754**	**37 769**	**39 868**	**41 036**
Compensation of employees	**19 442**	**20 324**	**21 625**	**24 330**	**24 330**	**26 765**	**28 225**	**29 600**
Salaries and wages	17 478	18 214	19 394	21 376	21 370	23 487	24 768	25 974
Social contributions	1 964	2 110	2 231	2 954	2 960	3 278	3 457	3 626
Goods and services	**83 863**	**18 158**	**32 860**	**11 193**	**10 424**	**11 004**	**11 643**	**11 436**
Administrative fees	122	167	67	115	154	120	126	127
Advertising	99	3	184	329	186	347	366	379
Minor assets	4	-	-	-	-	-	-	-
Catering: Departmental activities	118	75	55	110	100	116	122	125
Communication (G&S)	346	769	428	307	306	324	342	350
Computer services	14	-	-	-	-	-	-	-

Programme 6: Nuclear Energy Regulation and Management (Economic Classification)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Consultants: Business and advisory services	78 465	13 340	29 884	8 338	7 509	8 065	8 541	8 215
Legal services (G&S)	1 136	830	156	-	34	-	-	-
Contractors	3	-	-	-	-	-	-	-
Fleet services (including government motor transport)	-	2	6	-	1	-	-	-
Consumable supplies	20	6	10	2	8	2	2	2
Consumables: Stationery, printing and office supplies	1	-	1	80	51	84	88	92
Operating leases	-	8	22	-	-	-	-	-
Rental and hiring	-	4	18	-	-	-	-	-
Travel and subsistence	2 252	2 180	1 878	1 638	1 683	1 657	1 751	1 834
Training and development	-	-	-	-	-	-	-	-
Operating payments	8	12	-	-	-	-	-	-
Venues and facilities	1 275	762	151	274	392	289	305	312
Transfers and subsidies	**670 027**	**755 435**	**769 082**	**1 003 782**	**1 003 782**	**1 058 290**	**1 115 947**	**1 158 457**
Departmental agencies and accounts	50 936	68 573	62 042	90 595	90 595	94 864	99 532	103 792
Foreign governments and international organisations	19 753	22 691	24 326	22 756	22 756	24 007	25 327	26 260
Public corporations	599 338	664 171	682 714	890 431	890 431	939 419	991 088	1 028 405
Payments for capital assets	**98 378**	**-**	**46 439**	**-**	**-**	**-**	**-**	**-**
Transport equipment	-	-	-	-	-	-	-	-
Other machinery and equipment	11 031	-	-	-	-	-	-	-
Software and other intangible assets	87 347	-	46 439	-	-	-	-	-
Payments for financial assets	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Total economic classification	**871 710**	**793 917**	**870 006**	**1 039 305**	**1 038 536**	**1 096 059**	**1 155 815**	**1 199 493**

Programme 6: Nuclear Energy Regulation and Management (Transfer Payments)	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Beneficiary	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
South African Nuclear Energy Corporation	599 338	664 171	682 714	890 431	890 431	939 419	991 088	1 028 405
National Nuclear Regulator	40 936	38 573	16 510	43 096	43 096	45 467	47 968	49 753
International Atomic Energy Agency	19 753	22 691	24 326	19 224	19 224	20 281	21 396	22 184
National Radioactive Waste Disposal Institute	10 000	30 000	45 532	47 499	47 499	49 397	51 564	54 039
International Atomic Energy Agency	-	-	-	3 532	3 532	3 726	3 931	4 076
Total	**670 027**	**755 435**	**769 082**	**1 003 782**	**1 003 782**	**1 058 290**	**1 115 947**	**1 158 457**

6 Institutional resource allocation for branches

Branches	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Administration	612 240	604 872	622 100	626 671	624 890	642 343	683 222	707 825
Minerals and Petroleum Regulation	341 210	449 141	470 616	538 683	537 769	574 713	608 694	632 728
Mining, Minerals and Energy Policy Development	899 007	879 881	982 830	1 026 078	1 018 878	993 104	892 571	952 166
Mine Health and Safety Inspectorate	191 273	205 375	210 330	220 566	224 766	232 694	251 998	261 474
Mineral and Energy Resources Programmes and Projects	6 258 503	6 788 146	5 814 480	5 993 938	5 740 938	5 798 115	5 977 685	6 829 685
Nuclear Energy Regulation and Management	871 710	793 917	870 006	1 039 305	1 038 536	1 096 059	1 155 815	1 199 493
Total for Branches	**9 173 943**	**9 721 332**	**8 970 362**	**9 445 241**	**9 185 777**	**9 337 028**	**9 569 985**	**10 583 371**

Economic Classification	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Current payments	**1 453 230**	**1 454 181**	**1 556 163**	**1 585 702**	**1 579 519**	**1 683 999**	**1 778 469**	**1 850 892**
Compensation of employees	**880 265**	**910 540**	**957 872**	**1 049 456**	**1 045 542**	**1 118 104**	**1 190 781**	**1 242 564**
Salaries and wages	770 626	795 819	836 550	919 178	915 165	981 143	1 044 918	1 090 355
Social contributions	109 639	114 721	121 322	130 278	130 377	136 961	145 863	152 209
Goods and services	**572 965**	**543 641**	**598 291**	**536 246**	**533 977**	**565 895**	**587 688**	**608 328**
Administrative fees	7 898	6 137	4 680	10 369	10 095	9 877	10 480	10 839
Advertising	13 815	7 829	4 157	12 001	10 673	11 377	11 852	12 167
Minor assets	1 801	1 762	571	4 314	3 595	4 623	4 880	5 055
Audit costs: External	10 052	11 555	11 404	9 229	9 229	9 778	10 316	10 750
Bursaries: Employees	1 789	1 864	2 482	2 914	3 238	3 042	3 202	3 332
Catering: Departmental activities	3 497	3 180	4 760	5 038	5 339	5 049	5 329	5 519
Communication (G&S)	25 798	21 726	16 271	14 450	14 241	15 417	16 267	16 837
Computer services	37 530	35 590	35 471	38 312	39 357	43 517	45 741	45 426
Consultants: Business and advisory services	110 739	32 513	53 045	121 233	107 031	134 547	132 841	136 435
Legal services (G&S)	13 664	18 545	21 660	3 399	3 964	3 608	3 807	3 956
Contractors	3 263	5 581	11 455	5 782	15 610	9 191	9 696	10 061
Agency and support/outsourced services	1 096	189	882	10 896	440	11 495	12 127	12 585
Entertainment	8	18	-	280	231	284	299	292
Fleet services (including government motor transport)	11 793	11 990	14 125	12 934	13 337	13 666	14 414	14 931
Inventory: Clothing material and accessories	53	-	-	-	1	-	-	-
Inventory: Food and food supplies	19	-	-	2	2	2	2	2
Inventory: Materials and supplies	218	-	-	-	-	-	-	-
Inventory: Medical supplies	2	-	-	-	-	-	-	-

Economic Classification	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Consumable supplies	3 095	2 994	2 977	6 047	6 512	6 375	6 726	6 956
Consumables: Stationery, printing and office supplies	9 395	6 713	7 200	14 587	14 356	15 178	16 014	16 658
Operating leases	128 280	123 842	130 847	87 365	84 501	92 222	97 288	101 468
Rental and hiring	232	1 187	1 054	2 516	2 682	2 558	2 700	2 801
Property payments	15 110	13 515	14 355	15 657	18 180	15 633	16 230	16 896
Transport provided: Departmental activity	294	73	41	-	92	-	-	-
Travel and subsistence	120 402	112 877	121 550	113 500	114 588	113 005	119 440	125 419
Training and development	8 933	8 158	7 458	10 512	10 512	10 843	11 438	11 918
Operating payments	27 728	101 095	118 084	17 083	29 720	17 272	18 271	18 981
Venues and facilities	16 461	14 708	13 762	17 826	16 451	17 336	18 328	19 044
Interest and rent on land	**-**	**-**	**1**	**-**	**-**	**-**	**-**	**-**
Interest (Incl. interest on unitary payments (PPP))	-	-	1	-	-	-	-	-
Rent on land	-	-	-	-	-	-	-	-
Transfers and subsidies	**7 607 433**	**8 251 548**	**7 352 357**	**7 841 733**	**7 588 733**	**7 634 620**	**7 772 052**	**8 711 906**
Municipalities	2 131 871	2 290 284	2 119 501	2 090 393	2 090 393	2 076 746	2 233 140	2 361 959
Departmental agencies and accounts	506 065	570 128	605 135	647 904	647 904	761 291	651 231	699 525
Foreign governments and international organisations	25 003	25 622	26 412	29 478	29 478	31 099	32 809	34 033
Public corporations	4 802 602	5 113 053	4 365 113	4 725 189	4 472 189	4 401 963	4 471 379	5 221 020
Private enterprises	137 733	246 098	232 994	346 593	346 593	361 225	381 071	392 836
Households	4 159	6 363	3 202	2 176	2 176	2 296	2 422	2 533
Payments for capital assets	**111 966**	**15 603**	**61 186**	**17 806**	**17 525**	**18 409**	**19 464**	**20 573**
Buildings and other fixed structures	153	263	636	2 056	2 056	2 126	2 286	2 416
Transport equipment	3 262	2 565	1 972	-	-	-	-	-

Economic Classification	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Other machinery and equipment	21 204	11 983	12 139	15 750	15 469	16 283	17 178	18 157
Software and other intangible assets	87 347	792	46 439	-	-	-	-	-
Payments for financial assets	**1 314**	**-**	**655**	**-**	**-**	**-**	**-**	**-**
Total economic classification	**9 173 943**	**9 721 332**	**8 970 362**	**9 445 241**	**9 185 777**	**9 337 028**	**9 569 985**	**10 583 371**

Division of Revenue	Baseline					Medium-term expenditure framework		
	2016/17	2017/18	2018/19	2019/20		2020/21	2021/22	2022/23
	Audited outcome	Audited outcome	Audited outcome	Voted (Main appropriation)	Adjusted appropriation	Revised indicative baseline	Revised indicative baseline	Revised indicative baseline
Rand thousand	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
National	7 042 072	7 431 048	6 850 861	7 354 848	7 095 384	7 260 282	7 336 845	8 221 412
Local government conditional grants (Direct)	2 131 871	2 290 284	2 119 501	2 090 393	2 090 393	2 076 746	2 233 140	2 361 959
Total	**9 173 943**	**9 721 332**	**8 970 362**	**9 445 241**	**9 185 777**	**9 337 028**	**9 569 985**	**10 583 371**

6.1 Expenditure analysis

The National Development Plan envisages that by 2030, South Africa will have an adequate supply of electricity and liquid fuels to maintain economic activity and prevent economic disruptions, and a mining sector that prioritises the welfare of its human resources and the environment. To give effect to this vision, over the medium term, the DMRE will focus on transforming mining and energy resources, rehabilitating mines and the environment, extending access to electricity, enhancing energy efficiency, and managing nuclear energy in accordance with international commitments. These focus areas contribute to priority 1 (economic transformation and job creation) and priority 5 (social cohesion and safe communities) of government's 2019–2024 medium-term strategic framework.

Transfers and subsidies to public entities and municipalities of R31.6 billion over the MTEF period account for an estimated 81.8% of the planned spending. Total expenditure is expected to increase at an average annual rate of 4.8%, from R9.2 billion in 2019/20 to R10.6 billion in 2022/23.

Due to the labour intensive nature of the DMRE's work, where inspections must be conducted to ensure that mining companies comply with legislative requirements, expenditure on compensation of employees amounts to an estimated R3.6 billion over the medium term, 11.9% of total expenditure. To remain within the expenditure ceiling for compensation of employees, staff numbers are expected to decrease from 1 731 in 2019/20 to 1 687 in 2022/23. This decrease will not impact service delivery since these posts are predominantly administrative. Staff numbers will decrease further as a result of duplication of functions following the merger of the Department of Mineral Resources with the Department of Energy through the national macro organisation of government in 2019/20.

Transforming mining and energy resources

As the DMRE works towards growing the economy and creating jobs, transformation will be accelerated within the mining and energy sectors by monitoring and enforcing compliance with the newly approved Mining Charter, and monitoring adherence to social labour plans. The exploration of onshore and offshore oil and gas resources will be advanced, together with their optimal development and investments in the mineral and upstream petroleum sectors. Activities related to these initiatives are expected to increase in expenditure, from R399.2 million in 2019/20 to R468.1 million in 2022/23 at an average annual rate of 5.5% in the Mineral Regulation and Administration sub-programme in the Minerals and Petroleum Regulation Branch.

Rehabilitating mines and the environment

The DMRE plans to intensify its efforts to rehabilitate dangerous, derelict and ownerless mining sites which will promote the health and safety of mine employees and people in surrounding communities. Over the medium term, it aims to rehabilitate 129 mines, conduct 3 825 environmental inspections, and conduct 24 000 health inspections. As a result, allocations in the Mine Health and Safety Inspectorate Branch are expected to increase from R224.8 million in 2019/20 to R261.5 million in 2022/23 at an average annual rate of 5.2%.

Extending access to electricity

In support of government's policy to extend access to electricity for all South Africans, an additional 560 000 households are expected to be connected to the electricity grid over the medium term. To enable this, six new substations are set to be built and nine substations upgraded. A further 15 000 households per year are expected to be provided with non-grid, mainly solar, electrification. Despite reductions over the MTEF period of R1.2 billion in indirect grants to Eskom and R380.5 million in municipal grants, in 2020/21 and 2021/22, spending in the Integrated National Electrification Programme sub-programme is expected to increase at an average annual rate of 5.1%, from R5.2 billion in 2019/20 to R6.1 billion in 2022/23. Transfers to Eskom are set to increase from R3.1 billion in 2019/20 to R3.7 billion in 2022/23 at an average annual rate of 5.7 %, and transfers to municipalities are set to increase from R1.9 billion in 2019/20 to R2.1 billion in 2022/23 at an average annual rate of 4.4%. Transfers for non-grid connections are expected to increase from R212.9 million in 2019/20 to R240.9 million in 2022/23 at an average annual rate of 4.2%.

The DMRE's Electrification Masterplan, which will inform the rollout of electricity connections for universal access, is expected to be finalised in 2020/21. The plan provides a model for allocating resources based on data informed by backlogs, and is allocated R17.2 million over a two-year period, ending in 2021/22.

Enhancing energy efficiency

To realise a target of 1.5 terawatt hours of energy savings over the medium term, allocations to the energy efficiency and demand-side management grant are expected to increase from R227.1 million in 2019/20 to R243.3 million in 2022/23. Municipalities will be able to undertake initiatives to upgrade municipal infrastructure that is not energy efficient, such as replacing street and traffic lights with green technology.

Managing nuclear energy

The Nuclear Energy Regulation and Management Branch accounts for an estimated 11.6 % of the DMRE's total expenditure over the medium term, comprising transfers to entities. The South African Nuclear Energy Corporation is allocated R3 billion over the MTEF period, of which R2.3 billion is for operational costs and R603.3 million for the decontamination and decommissioning of old nuclear facilities. The National Radioactive Waste Disposal Institute will receive R154.4 million for its operations while it finalises its application for a radioactive waste disposal licence from the National Nuclear Regulator.

7 Updated key risks and mitigation strategies

Outcome	Key risk	Mitigation
Increase South Africa's share of the global exploration budget	Inability to grow the country's share of the global exploration budget	Source and secure exploration funding Fast-track the implementation of the Geoscience Technical Programme
Inclusive, equitable and competitive exploration	Not meeting transformation and growth targets	Promote transformation of the energy and mining sectors Pursue regulatory and structural reforms e.g. legislation review of the Petroleum Bill
	SLP: disputes arising from communities, municipalities, departments and holders of rights as a result of underdevelopment of socio-economic issues, disruption of mining activities – non-alignment of SLP with developmental plans of various stakeholders	Workshops and meetings on Social Labour Plan Participate in consultation/engagement sessions with municipalities and other relevant stakeholders on alignment of SLP with developmental plans
A stable framework within which exploration and mining companies can obtain prospecting and mining rights and the related environmental authorisations	Bottlenecks in the licensing processes Non-compliance with environmental protection regulation and policy	Institute of inter-governmental forums Reduce compliance cost for new entrants, and reduce regulatory barriers
Improved and streamlined regulatory processes and collaboration across regulators and relevant role players	Delays in regulatory decisions	Review regulatory frameworks to be more responsive to stakeholder needs Institute inter-governmental forums led by DMRE
Improved access to basic services and Affordable energy prices	Inability to reduce energy costs for the citizens of the country and dependent industries	Implementation of IRP2019 Diversification of energy sources – gas and liquid fuels, wind, solar, etc.
	Energy pricing	Amend the National Energy Regulator Act Amend the Electricity Regulation Act
	Energy security (supply and demand dynamics)	IRP, IEP, Demand Side Management
Evidence-based policy making that advances economic growth, socioeconomic welfare and prepares the economy for external shock (4IR, demand and supply dynamics)	Re-activeness to significant industry, regulatory and technology developments Missed opportunities to advance the DMRE mandate	Prioritise and fund relevant research areas
Increase in South Africa's share of the global minerals and energy market	Inability to capture a larger share of the global minerals and energy market	Bilateral agreements Review regulatory frameworks to promote industrialisation

Outcome	Key risk	Mitigation
Increased transformation, economic inclusion, and policy certainty	Non-compliance with the Draft Mining Charter	Women in Energy (WiE) Business Directory Legislative framework to accommodate small-scale mining
	Transformation: Non-compliance with Mining Charter resulting in economic and political instability, failure to transform sustainably	Workshops on the Mining Charter 2018 Referral of cases of fronting to CPIC/B-BBEE Commission Notices, directives, orders and instructions issued in terms of the MPRDA
	Artisanal mining	• Standalone legislation on ASSM
	Oversaturation of the market Unutilised trading infrastructure Retrenchment of employees Unwarranted pressure on social security system Failure to meet licensing objectives targets	• Develop scientific analysis tool • Finalise SOPs • International benchmark • Alignment with macro-spatial framework (national, regional, etc. Spatial Development Framework)
	• Possible litigations • Unlawful operators • Increased non-compliance	• Make recommendations to the Policy and Planning Branch to amend the legislative frameworks • Approval of SOPs
Diversify supply of mineral resources in support of both mining and energy sectors	Lack of research and to respond to industry dynamics thereby not capitalising on opportunities presented in the mining and energy value chains	Source funding to increase resource capacity and capability
Enable injection of carbon, reduce emissions	Conflict between environmental and climate obligations and aspirations, and economic growth and poverty alleviation imperatives	IRP2019 Amendment of NEMA, SEMAs
	Climate change	Just transition to low carbon economy IRP, SEIAs Implementation of strengthened stakeholder segmentation and targeting strategy, and diplomacy framework

Outcome	Key risk	Mitigation
Enable injection of carbon, reduce emissions	Non-compliance with environmental legislation Not meeting emissions targets	Investment in cleaner technologies
	Inability to respond to national climate change response measures	• Develop energy sector climate change strategy • Develop mitigation and adaptation plans for the energy sector • Allocation of additional funding
	Limited CDM project uptake and uncertainty of the form of the KYOTO Protocol 2nd commitments	• Lobby for bilateral trading with Japan and other EU members
	South Africa not gaining maximum benefit from the KYOTO Protocol	• Lobby for bilateral trading with Japan and other EU members
	Environment: Non-compliance with the legislation (MPRDA, NEMA and Waste Act) by holders of rights and permits resulting in EA/EMP: degradation and pollution of the environment, state liability, health hazards	• Workshops and meetings on NEMA, Mine Environmental Management Forum in place • Notices and directives issued in terms of NEMA • Notices, directives, orders and instructions issued in terms of provision of section 6 and 29 of MPRDA
Diversify energy sources by implementing IRP2019	Insufficient energy supply to service the country's demand	• Alternative supply sources • Accelerate energy efficiency rollouts • Pursue alternative sources of energy • Secure investments for infrastructure renewal, expansion and maintenance • Implementation of IRP2019
	Poor IEP – Inability to plan for future energy supply	• Develop SOPs for data collection and management processes • Develop a standard template for the collection of data • Liaison with local energy stakeholders to provide accurate and correct energy data • Establishment of energy data task teams for interpretation, analyses and classification of energy data across various energy commodities • Automation and streamlining of energy data • Increase capacity by employing permanent members • Increase capacity by employing permanent staff members or interns until the full functioning of the programme

Outcome	Key risk	Mitigation
Infrastructure investment by both public and private sectors	Lack of foreign direct investment	Strengthen governance frameworks and structures Pursue regulatory and structural reforms
Improve regulatory oversight	Silo working, duplicate functions and investment funding not optimally deployed	Develop an integrated service delivery model Develop long-term sustainable funding model
	Inconsistent implementation of agreements due to poor support from partners and line function	Ensure synergy and alignment of minerals and energy projects to foster greater cohesion Engage partners and work closer with line function
	Delay in the legislative process caused by external consultation	Mobilise and strengthen stakeholder consultation during drafting stage of legislative process
	Uncoordinated legislation and policy development within government	Improve coordination and consultation throughout all levels of government
Mobilise funding for strategic programmes and ensure financial sustainability of DMRE SOEs	Lack of funding for strategic programmes	Develop long-term sustainable funding model Expand mandates of DMRE entities
Strengthen governance of DMRE service delivery institutions	Financial sustainability of DMRE entities	Develop an integrated service delivery model Diversify sources of revenue
Modernise IT infrastructure in support of AI and Big Data in Mining and Energy to ensure availability of reliable and accurate mining, energy and economic data	Lack of reliable economic data for decision-making	Investment in supporting technologies
Provide the full portfolio of IT applications required in support of the DMRE value chain	Lack of technology infrastructure and IT enabling platforms	Implementation of one environmental system
	Unreliable IT and fragmented databases in terms of system databases	Provision of reliable IT Opportunity to improve compliance and quality of economic reports through use of other departmental resources (mine economics, SSM), SARS Integrate IT databases

Outcome	Key risk	Mitigation
	Inability to verify statistics and data	Opportunity to improve compliance and quality of economic reports through use of other departmental resources (mine economics, SSM), SARS Capacitate the Statistics Unit Conduct data verification inspections and random sampling
Promote culture of change and employee empowerment	Low employee morale and productivity Reduced capacity to execute mandates	Finalise organisational structures Culture programmes
Develop leadership capability and accountability at all levels	Corruption Delays in executive approvals of strategic decisions	Strengthen governance frameworks and structures Fill critical executive vacancies
Attract, recruit, retain and develop modern DMRE workforce	Insufficient skills to execute mandates	Finalise organisational structures Expanded Public Works Programme

8 Public Entities

Name of public entity	Mandate	Outcomes/Resolutions
National Energy Regulator of South Africa (NERSA)	The mandate of NERSA, as contained in relevant legislation, is summarised as follows: • Issuing of licences and setting pertinent conditions • Setting and/or approving tariffs and prices • Monitoring and enforcing compliance with licence conditions • Dispute resolution including mediation, arbitration and the handling of complaints • Gathering, storing and disseminating industry information • Setting of rules, guidelines and codes for the regulation of the three industries • Determination of conditions of supply and applicable standards • Registration of import and production activities	• Accessible and affordable electricity for all citizens • Energy supply that is certain and secure for current and future user needs through the orderly development and operation on the electricity supply infrastructure • A regulatory environment that facilitates investment in electricity infrastructure • Regulatory certainty within the electricity industry ***Piped Gas Industry Regulation*** • Access to competitive gas prices and gas services • Efficient, sustainable and orderly development of the piped-gas industry aimed at security of supply • A regulatory environment that facilitates investment in piped-gas infrastructure • A competitive piped-gas industry • Regulatory certainty within the piped-gas industry ***Petroleum Pipelines Industry*** • Access to petroleum infrastructure • Efficient, sustainable and orderly development of a transformed petroleum pipelines industry aimed at security of supply • A regulatory environment that provides regulatory certainty and facilitates investment in petroleum pipeline infrastructure • A competitive petroleum pipelines industry ***Transversal Regulatory and Organisational*** • An enabling environment for the benefit of internal and external stakeholders with a skilled workforce that is empowered to work in a complex and ambiguous environment

Name of public entity	Mandate	Outcomes/Resolutions
Central Energy Fund	The Mandate of the CEF is derived from the CEF Act, 1977 (Act No. 38 of 1977) and the Ministerial directives issued thereafter. The mandate is to contribute to the security of energy supply for the country.	• Increase import volumes and add more trading skills • Leverage the Strategic Fuel Fund (SFF) balance sheet and infrastructure for (heavy) condensate optimal sourcing • Leverage strategic partnerships to extend gas production from known PetroSA discoveries – source gas from the Brulpadda discovery and consider acquiring an equity interest in the block • Source Liquefied Natural Gas (LNG) from the Coega Hub Project and G-G supply options • Complete a feasibility study for infrastructure requirements and commercial viability for the LNG supply to the gas-to-liquids (GTL) by December 2020
African Exploration Mining and Finance Corporation (SOC) Ltd (AEMFC)	African Exploration Mining and Finance Corporation (SOC) Ltd (AEMFC) is the State Owned Mining Company established to secure South Africa's energy supply primarily through the mining and supply of coal for the generation of electricity, as well as securing other resources that will provide energy for the future, including key minerals for beneficiation in the energy and steel value chain.	• Own and shareholder equity funding through strategic partnerships from other DMRE subsidiaries, FDI's and BRICS • Additional mining rights and acquisitions and ensure sustained ESKOM uptake and diversifying clients • Identify minerals that are in demand for both clean energy (to support IRP2019) and other diversified minerals in general • Apply for mineral rights and identify key off-takers in collaboration with CGS, MINTEK and DMRE support • Develop a regional and continental strategy to identify opportunities and offtake agreements for various minerals • Closer collaboration with CGS regarding maps • Conclude – in collaboration with the DMRE – the AEMFC Bill of 2016

Name of public entity	Mandate	Outcomes/Resolutions
PetroSA	PetroSA operates as a commercial entity and creates value for the shareholder (Pay tax and dividends). It advances national objectives in the petroleum industry by contributing to the security of energy supply, and complementing and promoting government policy and strategic thrust (Energy Security Masterplan and NDP).	Petro SA's strategic initiatives are: • Leverage strategic partnerships to extend gas production from known PetroSA discoveries • Source LNG: - Coega Hub Project - G-G supply options • Source gas from the Brulpadda discover and consider acquiring equity interest in the block • Leverage SFF balance sheet and infrastructure for (heavy) condensate optimal sourcing • Develop a funding strategy for the decommissioning liability • Based on a clear turn-around plan and capacity to fund the liability in the long term, consider procuring a guarantee from CEF, NT or insurance • Increase commercial customers • Leverage SFF infrastructure for product supply. • Improve cash conversion cycle (reduce debtors' book and inventory) • Optimise product slate • Increase plant reliability • Dispose of non-core assets • Comprehensively review the cost structure

Name of public entity	Mandate	Outcomes/Resolutions
iGas	Per the Ministerial Directive of 2 October 2000, "iGas will act as the official State agency for the development of the hydrocarbon gas industry in Southern Africa. iGas is required to support the growth of the Southern African economy through active investments in Southern Africa for the provision of gas molecules and gas infrastructure."	• Engage Mozambique on bi-lateral engagement on additional gas • Increase production from Coega LNG and focus on Eskom's repowering • Establish a greater indigenous gas supply • Pursue improved service delivery and migrate more services to iGas • Encourage internal engagement between CEF subsidiaries to reduce internal competition and workshop with Transnet for closer collaboration, as well as increase support with the DMRE • Engage around policy and regulations • Acquire and merge Transnet pipelines • Revise governance frameworks and delegation of authority, as well as develop iGas specific policies • Commence recruitment for senior positions and project-specific roles
Strategic Stock Fund (SSF)	s17(1) – The Minister may, in a prescribed manner, for the purposes of ensuring security of supply, direct any state-owned entity to acquire, maintain, monitor and manage national strategic energy feedstocks and carriers. SSF is mandated to provide the country with security of supply of hydrocarbons and related infrastructure in case of emergency.	• To promote Nile/Orange Project brand with the South Sudanese citizens • Thorough risk assessment and mitigation before going into the states • Completion of the exploration programme • Provide infrastructure for strategic fuel supply to DOD and Eskom • Ministerial directive to SFF to participate in strategic storage white product • Obtain approval of Strategic Stock Policy • Implement the Ministerial directive (DOT s79 determination) to TNPA to allocate capacity

Name of public entity	Mandate	Outcomes/Resolutions
Petroleum Agency of South Africa (PASA)	The mandate of the Petroleum Agency is to promote exploration for onshore and offshore oil and gas resources and their optimal development on behalf of government. The agency regulates exploration and production activities, and acts as the custodian of the national petroleum exploration and production database.	• Increase licensing and exploration fees, promote revenue sharing agreements, offer sign-on bonuses, and secure funding for ECSCP via special MTEF allocation. Focus on its financial efficiencies and revenue generation capability, as well as translate resources to economic value • Establish effective use of resources, improve workforce productivity • Introduce a performance management system, rework practices to align with BSC methodology and ensure that performance is impact- and not output-based. Identify projects aligned with the NDP imperatives, and review fees structure • Increase exploration and production activities in South Africa, as well as regulate the exploration and production environment • Acquire, archive and enhance all petroleum exploration and production data, ensure a viable and sustainable agency, and deliver national projects • Ensure an effective and efficient operating model that is aligned with policy imperatives while realising the mandate • Resolve inefficiencies in SOEs and establish PASA as an independent entity to regulate, promote and facilitate (this includes the storage of relevant data) the oil and gas industry • Intensify focus on oil and gas development • Closer collaboration with all stakeholders including CGS, SANEDI and NERSA in terms of the shale gas project; carbon capture project and streamlining the oil and gas regulatory value chain • Establish strategic relationships regulated by memorandums of understanding • Ensure regulatory and legislative certainty through several channels, including finalisation of the Upstream Oil and Gas Bill and development of comprehensive legal guidelines aligned with the objects of the MPRDA (e.g. optimal exploration, substantial and meaningful participation by Historically Disadvantaged South Africans) • Partition both onshore and offshore acreage to reasonably sized blocks informed by a benchmarking exercise to be undertaken • Develop and implement an acreage maturation chart • Increase investment into South Africa

Name of public entity	Mandate	Outcomes/Resolutions
South African National Energy Development Institute (SANEDI)	The National Energy Act outlines SANEDI's direct mandate, driven by the DMRE, which requires SANEDI to direct, monitor, conduct and promote energy research and promote energy efficiency measures throughout the economy.	• Expanding donor reach – apply for Green/Climate Funds (GEF, EU) and explore funding from the Electricity Tariff (1/2 cent Eskom, R&D funding), via the research component of the Multi-Year Price Determination (MYPD) – include discussions with NERSA and the DMRE • Address the unfunded mandate through an organisational review to focus, align and optimise resources • Engage with other state entities, including the CSIR, MINTEK, CEF, TIA, NCPC, CGS, PASA, and PetroSA • Encourage DMRE to give priority to national projects and respond timeously • Implement a Skills Development and Talent Retention Policy • Assist the DMRE on legislative and regulation development regarding the IPR Act Listing, revision of the SANEDI Chapter, and regulations for clean technology interventions
MINTEK	The objects of MINTEK are, through research, development and technology transfer, to promote mineral technology, and to foster the establishment and expansion of industries in the field of minerals and products derived therefrom.	• Work on a strategic realignment that covers all the identified areas: from the alignment of the entire organisation to the mandate as articulated in the Mineral Technology Act to engagements with customers and industry in particular • Align research and technology development operations to meet industry needs • Finalise the medium- to long-term MINTEK Strategy, launch the strategy, and embark on a stakeholder engagement campaign to socialise them with the new strategic direction of the organisation • Conclude the operating model, as well as the macro organisational structure – in preparation for this develop a series of position papers focusing on reviving and stimulating specific sectors within the minerals and mining space, which will make a meaningful contribution to the economy • Monitor the implementation of and reporting on the SET Human Development Programme aimed primarily at developing skills, capacity and capabilities in science, engineering and technology, from junior level through to senior researcher levels

Name of public entity	Mandate	Outcomes/Resolutions
The Council for Geoscience (CGS)	The Council for Geoscience (CGS) is one of the National Science Councils of South Africa and is the legal successor of the Geological Survey of South Africa, which was formed in 1912 by the amalgamation of 3 former Surveys, the oldest of which – the Geological Commission of the Cape of Good Hope – was founded in 1895. The Geoscience Act, 1993 (Act No. 100 of 1993), as amended, established the CGS in its present form. • Serve as the national custodian of ALL geoscientific information and prospecting information relating to the earth, the marine environment and geomagnetic space • The systematic onshore and offshore geoscientific mapping of South Africa • Basic geoscience research into the nature and origin of rocks • Collect and curate all geoscience data and act as a National Geoscience Repository • The compilation and development of comprehensive and integrated geoscience knowledge and information, such as geology, geophysics, geochemistry, engineering geology, economic geology, geochronology, palaeontology, geohydrological aquifer systems, geotechnical investigations, marine geology, geomagnetism, seismology, geohazards, environmental geology and other related disciplines	• Develop a long-term sustainable funding model that balances its mandate with commercial business • Establish continuous engagement with National Treasury to advance the value proposition of investment in geosciences, as well as develop an aggressive commercial business development strategy in South Africa and abroad • Fast-track the implementation of the Geoscience Technical Programme (GTP) to catalyse investment in exploration – the goal is to ensure the long-term sustainable funding model that sustains the impact of the geosciences in South Africa • Full implementation of an Enterprise Resource Plan that integrates all business activities within the CGS – this includes developing an integrated operating model and implementing data policy guidelines together with the installation of suited technological infrastructure, in line with the ICT governance framework and data architecture • Full implementation of the Integrated and Multidisciplinary Geoscience Mapping Programme (IMMP), annual recapitalisation plan, and job evaluation and exploration of a sustainable funding model • Become a streamlined government business – conduct a detailed analysis of functional duplication of geosciences within the DMRE entities and streamline such activities to an entity with a legislated mandated for geosciences • Pursue the full implementation of legislation provisions: Technical amendment of the Geoscience Act, finalisation of the Geoscience Act Regulations and implementation of the Geoscience Data-Sharing Model for PR and MR holders • Other resolutions include the full installation of governance structures, the appointment of the CGS Board, maintenance of a fully capacitated EXCO and implementation of a Leadership Talent Management Programme

Name of public entity	Mandate	Outcomes/Resolutions
The Council for Geoscience (CGS)	• Promote the search for, and exploitation of, any minerals in the country • Bring to the notice of the Minister any information in relation to the prospecting for and mining of mineral resources, which is likely to be of use or benefit to South Africa • Promote the search for and the exploitation of any minerals in South Africa • Study (i) the distribution and nature of mineral resources and (ii) geo-environmental aspects of past, current and future mineral exploitation • Study the use of the surface and the subsurface of the land and the seabed, and from a geoscientific viewpoint advise government institutions and the general public on the judicious and safe use thereof with a view to facilitate sustainable development • Develop and maintain the National Geoscientific Library, the National Geoscientific Information Centre, the National Borehole Core Depository, the National Geophysical and Geochemical Test Sites, the National Geoscience Museum, the National Seismological Network and the National Geoscience Analytical Facility • Conduct investigations and render prescribed specialised services to public and private institutions • Render geoscience knowledge services and advice to the State	

Name of public entity	Mandate	Outcomes/Resolutions
MHSC	• Advise the Minister on all occupational health and safety issues in the mining industry including legislation, research and promotion. • Review and develop legislation for recommendation to the Minister (Focus on Regulations). • Oversee research in relation to health and safety in the mining industry. • Liaise with other bodies concerned with health and safety issues (MQA, State departments and various stakeholders). • Promote health and safety culture in the mining industry.	• Focus on revenue diversification by developing and implementing the revenue generation strategy, outlining diverse revenue streams • Develop a 4IR implementation strategy • Build a capacity scope that will include the employees of the MHSC, members of Council and its Advisory Committees • Implement the promotion and dissemination strategy for target audiences, and build internal capacity within the MHSC to improve turn-around times on MHSC processes and research outcomes that incorporate changes in technology and development, and enhancement of safety tools • Awareness that will result in reducing health and safety-related incidents, and enhanced skills and internal capacity within the MHSC • Appoint the Social and Ethics Committee to focus on Procurement and Contract Management improvements; appoint a dedicated Compliance Officer, and improve continuous review and monitoring efforts

Name of public entity	Mandate	Outcomes/Resolutions
South African Nuclear Energy Corporation (Necsa)	Necsa is established in terms of Section 3(1) of the Nuclear Energy Act, 1999 (Act No. 46 of 1999). The Act provides for the commercialisation of nuclear and related products and services, and delegates specific responsibilities to the corporation, including the implementation and execution of national safeguards and other international obligations. The South African Nuclear Energy Policy of 2008 directs Necsa to (i) investigate the entire nuclear fuel cycle with the aim of re-establishing viable fuel cycle facilities and (ii) serve as the anchor for nuclear energy research, development and innovation in South Africa. Necsa is mandated to undertake and promote research and development in the field of nuclear energy and radiation sciences and technology. It processes and enriches source material, special nuclear material and restricted material. Apart from protecting the South African environment from nuclear threats, it supplies the commercial application of nuclear and associated technology and fulfils the State's nuclear obligations. It is part of the Research and Regulation Cluster in this report.	Refer to the Necsa's 2020/21 APP for details regarding the specific outputs planned by Necsa for the period

Name of public entity	Mandate	Outcomes/Resolutions
National Radioactive Waste Disposal Institute (NRWDI)	A South African State-Owned Entity dedicated to professional nuclear waste management and disposal services in terms of the National Radioactive Waste Disposal Institute Act, 2008 (Act No. 53 of 2008). • Manage radioactive waste disposal on a national basis. • Operate the national low-level waste repository at Vaalputs. • Design and implement disposal solutions for all categories of radioactive waste. • Develop criteria for accepting and disposing of radioactive waste in compliance with applicable regulatory safety requirements and any other technical and operational requirements. • Assess and inspect the acceptability of radioactive waste for disposal and issue radioactive waste disposal certificates. • Manage, operate and monitor operational radioactive waste disposal facilities including related predisposal management of radioactive waste on disposal sites. • Investigate the need for any new radioactive waste disposal facilities and to site, design and construct new facilities as required. • Define and conduct research and development aimed at finding solutions for long-term radioactive waste management. • 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. • Manage ownerless radioactive waste on behalf of the government, including the development of radioactive waste management plans for such waste. • Assist generators of small quantities of radioactive waste in all technical aspects related to the management of such waste. • Implement institutional control over closed repositories, including radiological monitoring and maintenance as appropriate.	• An effective, efficient and responsive NRWDI • Safe, secure and environmentally sustainable waste disposal operations • Centralised storage of spent nuclear fuel • Compliance with applicable statutory requirements

Name of public entity	Mandate	Outcomes/Resolutions
National Radioactive Waste Disposal Institute (NRWDI)	• Implement any assignments or directives from the Minister regarding radioactive waste management • Provide information on all aspects of radioactive waste management to the public living around radioactive waste disposal facilities and to the public in general • Advise nationally on radioactive waste management • Co-operate with any person or institution in matters falling within these functions • Any other function necessary to achieve the objectives of the Institute	
National Nuclear Regulator (NNR)	The National Nuclear Regulator (NNR) is a public entity which is established and governed in terms of Section 3 of the National Nuclear Regulatory Act, (Act No. 47 of 1999) to provide for the protection of persons, property and the environment against nuclear damage through the establishment of safety standards and regulatory practices. It is responsible for granting nuclear authorisations and exercising regulatory control related to safety over the siting, design, construction, operation, manufacture of component parts, and the decontamination, decommissioning and closure of nuclear installations; and vessels propelled by nuclear power or having radioactive material on board which is capable of causing nuclear damage.	• Explore rendering services to other regulators and international organisations to fund regulatory research and development • Request approval by the Minister for additional funding avenue from Centre for Nuclear Safety and Security (CNSS) activities, as provided for in the NNR Act • Identify an integrated regulatory approach between the NNR and the DMRE to aid intervention at unregulated legacy sites • Address funding of NNR scientific work – identify sites and provide data to DMRE for regulatory decisions • Address the overlap of radioactive medical sources with SAHPRA by managing the regulation of all radioactive sources to centralise management of radioactive sources by the NNR • Fast track the process of promulgating the Amendment of the NNR Act, the promulgation of regulations (including Control of Developments around the Koeberg Nuclear Power Plant), and other regulations which will impact the effective regulation of nuclear activities and nuclear installations in the country. Advance the pace of engagements between the NNR and the DMRE to finalise amendments

Name of public entity	Mandate	Outcomes/Resolutions
Pelchem SOC Ltd	Pelchem is the sole producer and supplier of fluorochemicals in the Southern Hemisphere including hydrofluoric acid, fluorine gas mixtures and a range of specialty perfluorocarbons and fluoromonomers to South African and international customers.	• Necsa Board to reverse its decision regarding debt-to-equity conversion • Electricity increases to be capped at CPI • Fund projects through partnerships and make provisions around the set-aside ARV agreement • Develop a framework to regulate increases to specific industries, chase the designation of fluorspar as a strategic mineral, as well as gain approval of projects with partnerships and business cases • Leverage strategic partnerships with key customers to develop the grade of product needed by the market and collaborate with AEFC to develop mothballed fluorspar mines • Simplify partnership approval frameworks and governance structures
NTP Radioisotopes SOC Ltd (NTP)	NTP is a state-owned public company and is a subsidiary of the South African Nuclear Energy Corporation (Necsa). Originally conceived in the early 1970s to supply the local South African market with commercial radiopharmaceuticals, NTP is now among the world's top producers and distributors of key medical radioisotope molybdenum-99 (Mo-99), and radioisotope-based diagnostic imaging and therapy products including iodine-131 and lutetium-177.	• Implement the Radiopharmaceutical Strategy for Growth for South Africa and Africa to the Middle East. • Leverage active pharmaceutical ingredient supply to Brazil, India and China, and pursue bilateral relationships with BRICs (via the Department of Trade and Industry and Department of International Relations and Cooperation) and National Cancer Management (via the Department of Health). • Explore more pipelines by engaging in the Africa Free Trade Agreement beyond the 12 countries South Africa already trades with. • Partner with the Department of Health to deliver the National Cancer Management Programme in support of NHI. • Make strategic investments towards managing the key Necsa facilities, ensuring the continued sustainability in complying with regulations as well as funds for operations. • Address overlapping mandates by identifying synergies in the global market, approached as SA Inc for medical isotopes.

Name of public entity	Mandate	Outcomes/Resolutions
NTP Radioisotopes SOC Ltd (NTP)	NTP currently supplies up to a third of global demand for Mo-99, which is the most widely used medical isotope. The daughter or decay product of Mo-99, technetium-99m (Tc-99m), is used in more than 40-million medical diagnostic imaging studies every year.	• Seek to enhance co-operation for opportunity collaboration – engage with key licence authorities, pursue bilateral engagements with key trading countries and enhance communication and engagement between Necsa, NTP, NNR and DMRE.
The South African Diamond and Precious Metals Regulator (SADPMR)	SADPMR fulfils its mandate through the Diamonds Act, 1986 as amended, the Precious Metals Act, 2005, Diamond Export Levy (Administration) Act, 2007, and the Diamond Export Levy Act, 2007	• Gain support from the DMRE in retaining the surplus for 2018/2019. • Review finance model • Compile proposed amendments to empowering legislation • Pursue constant engagements through forums with SARS and SAPS • Draft proposed amendments for the DMRE's consideration to address alignment issues with legislation and local imperatives • Intense implementation of the Marketing and Communication Strategy, phased in a five-year period
State Diamond Trader (SDT)	SDT is a State-owned entity established in 2007 in terms of Section 14 of the Diamond Act, 1986 (Act No. 56 of 1986) to operate in the diamond industry to: • Support and facilitate growth in local diamond beneficiation • Buy and sell rough diamonds for local beneficiation • Promote equitable access to and beneficiation of the country's diamond resources • Grow South Africa's diamond cutting and polishing industry by increasing HDSA for beneficiation • Address distortion created by excluding previously disadvantaged groups from economic participation (transform diamond industry) • Purchase up to 10% of the run of mine from South African producers • Sell to registered customers through an application and approved process	• Review the business model to create a better revenue picture through: - Diversification of operations, such as the trade on polished diamonds and identify other alternative funding streams, and a focus to sell to both beneficiation parties and dealers - Facilitate the above changes through relevant legislation by exploring the possibility of the Minister reviewing regulations, particularly around the SDT's capability to buy and sell in the market • Address overlaps to ensure properly coordinated functions, and clarified roles and responsibilities through round-tables with involved parties • Expedite the Board appointment process • Review organisational structures, including a new memorandum of understanding with the South African Diamond and Precious Metals Regulator (SADPMR) • Explore shared services with other entities • The SDT will benefit from an amended act allowing new trading conditions

9 Infrastructure Projects

The Department of Mineral Resources and Energy (DMRE) leads three Strategic Integrated Projects (SIPs), namely Integrated Municipal Infrastructure Projects; Green Energy in support of the South African Economy; and Electricity Transmission and Distribution for All. In addition, the DMRE is required to directly or indirectly participate in other SIP initiatives for coordination and reporting purposes.

9.1 Expenditure on long-term infrastructure and other capital plans

9.1.1 Extending access to electricity

In support of government's policy to extend access to electricity to all South Africans, an additional 560 000 households are expected to be connected to the electricity grid over the medium term. To enable this, 6 new substations are set to be built and 9 substations upgraded. A further 15 000 households per year are expected to be provided with non-grid, mainly solar, electrification. Despite reductions over the MTEF period of R1.2 billion in indirect grants to Eskom and R380.5 million in municipal grants, mainly in 2020/21 and 2021/22, spending in the Integrated National Electrification Programme sub-programme is expected to increase at an average annual rate of 5.1%., from R5.2 billion in 2019/20 to R6.1 billion in 2022/23. Transfers to Eskom are set to increase from R3.1 billion in 2019/20 to R3.7 billion in 2022/23 at an average annual rate of 5.7%., and transfers to municipalities are set to increase from R1.9 billion in 2019/20 to R2.1 billion in 2022/23 at an average annual rate of 4.4%.. Transfers for non-grid connections are expected to increase from R212.9 million in 2019/20 to R238.5 million in 2022/23 at an average annual rate of 4.2%.

The DMRE's Electrification Masterplan, which is intended to inform the rollout of electrification connections for universal access, is expected to be finalised in 2020/21. The plan will provide a model for allocating resources based on data informed by factors such as backlogs, and is allocated R17.2 million over a two-year period, ending in 2021/22.

9.1.2 Enhancing energy efficiency

To realise a target of 1.5 terawatt hours of energy savings over the medium term, allocations to the energy efficiency and demand-side management grant are expected to increase from R227.1 million in 2019/20 to R243.3 million in 2022/23. This will enable municipalities to undertake initiatives to upgrade municipal infrastructure that is not energy efficient, such as replacing street and traffic lights with greener technology.

Project Name	Programme	Outputs	Outcome appropriation			Main appropriation	Adjusted appropriation	Revised estimate	Medium-term estimate		
			2016/17	2017/18	2018/19	2019/20			2020/21	2021/22	2022/23
New assets (R thousand)			R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000
INEP: Eskom	Electrification and Energy Programme and Project Management	Provision of capital subsidies to Eskom to address electrification backlogs for permanently occupied residential dwellings, install bulk infrastructure and rehabilitate electrification infrastructure	3 526 334	3 846 154	3 262 031	3 374 053	3 124 053	3 124 053	3 001 483	2 994 257	3 688 162
INEP: Municipalities	Electrification and Energy Programme and Project Management	Provision of capital subsidies to municipalities to address electrification backlogs for permanently occupied residential dwellings, install bulk infrastructure and rehabilitate electrification infrastructure	1 946 246	2 087 048	1 904 477	1 863 328	1 863 328	1 863 328	1 858 752	2 003 157	2 118 668

Project Name	Programme	Outputs	Outcome appropriation			Main appropriation	Adjusted appropriation	Revised estimate	Medium-term estimate		
			2016/17	2017/18	2018/19	2019/20			2020/21	2021/22	2022/23
New assets (R thousand)			R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000
INEP: Non- grid electrification technology	Electrification and Energy Programme and Project Management	Provision of capital subsidies to non-grid electrification service providers to address electrification backlogs	137 733	158 960	134 555	212 941	212 941	63 882	220 160	232 269	238 502
Total			5,610,313	6,092,162	5 315 657	5 450 322	-250 000	5 200 322	5 080 395	5 229 683	6 045 332

10 Public-Private Partnerships (PPPs)

N/A

Annexures to the Annual Performance Plan

Annexure A: Amendments to the Strategic Plan

N/A at this stage

Annexure B: Conditional grants

The DMRE administers conditional grants with regard to the National Electrification Programme and Energy Efficiency and Demand-Side Management (EEDSM) Programme. These conditional grants are summarised as follows (details provided in the Division of Revenue Act, 2014 [Act No.10 of 2014]):

Name of grant	Purpose	Outputs	Current annual budget (thousands) R'000	Period of grant
Energy Efficiency and Demand Side Management (EEDSM) Grant	To provide subsidies to municipalities to implement energy efficiency and demand side management (EEDSM) initiatives within municipal infrastructure in order to reduce electricity consumption and improve energy efficiency	Amount of energy saved in Terawatt hour (TWh)	217 994 000	July 2020–June 2021
Electrification and Energy Programme and Project Management	Integrated national electrification programme: Eskom	Electrification households	3 001 483	April 2020–March 2021
Electrification and Energy Programme and Project Management	Integrated national electrification programme: Municipalities	Electrification households	1 858 752	April 2020–March 2021

Annexure C: Consolidated indicators

Institution	Output indicator	Annual target	Data source
Department of Mineral Resources and Energy	76	75	MTSF and 2020–25 Strategic Plan, IRP, MPRDA, PPA

Annexure D: District development model

District Model Planning is led by the Department of Cooperative Governance and Traditional Affairs (COGTA). Annual Performance Plan service delivery projects, where applicable and when required by COGTA will be integrated into the District Model.

Annexure E: Technical indicator descriptions (TIDs)

TIDs will be provided in a separate document.

RP156/2020
ISBN: 978-0-621-48351-2