



# Annual Performance Plan

**2019/20**  
**1st draft**





## Foreword

The global energy sector is undergoing transformation, driven by technological, political, legal, and socio-economic factors that vary by geography and market. In line with international trends, South Africa is seeing a large-scale shift to low-carbon energy supplies and solutions with associated changes in infrastructure requirements and the way utilities provide energy services. Simultaneously, South Africa continues the drive for universal energy access for all South Africans with particular focus on energy poverty in the country.

SANEDI's energy development agenda, in line with the South African government's pursuit of eradicating poverty, is a key part of our country's energy journey. Its portfolio of initiatives is closely attuned to technological advancements, declining technology costs and continued innovation in the energy sector. As a whole, these can enable South Africa to take full advantage of our energy resources and the associated infrastructure development as a vehicle for economic growth, industrialisation, poverty alleviation, education, employment creation and sustainable development.

During the period of this plan, SANEDI will focus its attention on:

- Essential applied energy research that is responsive and sensitive to national priorities and the rapidly developing energy environment as well as building stronger linkages with national and international institutions that offer academic excellence, academic collaboration and support.
- Collection and consolidation of energy data, specific to SANEDI's areas of activity that can feed to the Department of Energy's (DoE) extensive energy data and information management initiative, while additionally providing support and stimuli for industrial activities and serving its information needs.
- Pursuing a resource-efficient society by supporting the implementation of energy efficient (EE) solutions and proactively creating awareness about the available EE options and solutions.
- Promoting low energy and low carbon innovation (i.e. accelerating and facilitating the progress of clean energy solutions through demonstration and pilot phases to where these solutions can tangibly transform the South African energy industry and economy).
- Supporting the development of research and green industry capacity with a view to producing suitable manpower and stimulating economic activity that supports sustainable development.

Implementation of the plan and the delivery of a coherent energy development service to Government and industry will require SANEDI to continue developing and exploring ways to partner with other agencies and organisations, both public and private.

The current plan is a comprehensive result of internal, key stakeholder, and DoE consultation and discussions. Such inputs, together with documented national policy direction, which is also seen to be a reflection of the directives of the main shareholder, namely, the South African populace, serves as the basis for SANEDI's planning process. Further engagements with our key stakeholders (and most importantly broader society, the DoE as shareholder, as well as the new SANEDI Board) will be pursued before finalising the plan. Vigorous consultation is deemed critical in order to ensure SANEDI delivers a valuable contribution and enhances service delivery to the DoE, the South African government and main shareholder, i.e. the public.

This rolling, three-year 2019/20 Annual Performance Plan (APP) articulates the goals and initiatives that will give effect to SANEDI's energy development mandate as described in the National Energy Act, No 34 of 2008.

The APP is presented in three parts. Part A reiterates SANEDI's vision, mission, core values and strategic outcome-orientated goals as context for planning. It also provides an analysis of the external and internal landscape within which SANEDI will be delivering on its mandate. Part B describes SANEDI's programmes, objectives, key performance areas and corresponding initiatives, as well as the targets defined in response to the strategic context. Part C clarifies linkages to other plans.



As accounting authority, I commit SANEDI to executing the plan and delivering the goals and objectives, as described, for which funding has been committed.

The 2019/20 APP is submitted for approval by the DoE.

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**Mr Nkululeko Buthelezi**  
**SANEDI: Interim Chairperson**



## Official sign-off

It is hereby certified that this Annual Performance Plan:

- Was developed by the management of SANEDI under the guidance of the DoE.
- Takes into account all the relevant policies, legislation and other mandates for which SANEDI is responsible.
- Accurately reflects the performance targets that SANEDI will endeavour to achieve over the 2019/20 financial year given the financial resources made available in the budget for this period.

**Ms. Tuleka Mpotulo**  
Corporate Planner

Signature: \_\_\_\_\_

**Ms. Lethabo Manamela**  
Chief Financial Officer

Signature: \_\_\_\_\_

**Dr. Thembakazi Mali**  
Interim Chief Executive Officer

Signature: \_\_\_\_\_

**Approved by:**

**Mr. Nkululeko Buthelezi**  
Interim Chairperson of the SANEDI  
Board  
Accounting Authority of SANEDI

Signature: \_\_\_\_\_



# Contents

<b>Official sign-off</b> .....	5
<b>Contents</b> .....	6
<b>List of figures</b> .....	7
<b>List of acronyms and abbreviations</b> .....	8
<b>Part A   Strategic overview</b> .....	10
1 Strategic overview .....	11
2 Updated situational analysis.....	12
2.1 External environment .....	12
2.2 Internal environment.....	14
2.3 Performance delivery environment.....	15
2.4 Organisational environment.....	25
2.5 Description of the strategic planning process .....	26
3 Revisions to legislative and other mandates .....	26
4 Overview of 2019/20 budget and MTEF estimates .....	27
4.1 Expenditure estimate .....	27
4.2 Relating expenditure trends to strategic outcome orientated goals.....	30
<b>Part B   Programme and sub-programme plans</b> .....	33
5 Performance framework overview .....	34
6 Programme 1: Administration .....	36
6.1 Programme 1: Strategic objective and medium term targets for 2019/20 – 2021/22.....	37
6.2 Programme 1: Performance indicators and annual targets for 2019/18 – 2021/22 .....	38
6.3 Programme 1: Quarterly targets for 2019/20 .....	39
6.4 Reconciling performance targets with the Budget and MTEF .....	40
7 Programme 2: Applied energy research, development and innovation.....	43
7.1 Programme 2: Strategic objective and medium term targets for 2019/20-2021/22 .....	44
7.2 Programme 2: Performance indicators and annual targets for 2019/20-2021/22.....	45
7.3 Programme 2: Quarterly targets for 2019/20 .....	55
7.4 Reconciling performance targets with the Budget and MTEF .....	61
8 Programme 3: Energy Efficiency (EE).....	64
8.1 Strategic objective and medium term targets for 2019/20-2021/22 .....	65
8.2 Programme 3: Performance indicators and annual targets for 2019/20-2021/22.....	66
8.3 Programme 3: Quarterly targets for 2019/20 .....	67
8.4 Reconciling performance targets with the Budget and MTEF .....	68



**Part C | Links to other plans** ..... 70

9 Links to long-term infrastructure and other capital plans ..... 71

10 Public-private partnerships ..... 71

11 Partnerships with and contributions from development partners ..... 71

12 Annexure A: Changes to the Strategic Plan ..... 73

13 Annexure B: Technical indicator descriptions and definitions ..... 79

    13.1 Performance framework definitions ..... 79

    13.2 Programme 1: Technical Indicator Descriptions ..... 81

    13.3 Programme 2: Technical Indicator Descriptions ..... 86

    13.4 Programme 3: Technical Indicator Descriptions ..... 91

## List of figures

Figure 1: SANEDI Strategy Map ..... 11

Figure 2: SANEDI organisational structure ..... 25



## List of acronyms and abbreviations

The following acronyms, alphabetically listed, are used in the report:

<b>Acronym</b>	<b>Description / definition</b>
AfDB	African Development Bank
AMEU	Association of Municipal Electricity Utilities
AMI	Advanced Metering Infrastructure
CESAR	Centre for Energy Systems Analysis and Research
DEA	Department of Environmental Affairs
DoE	Department of Energy (formerly Department of Minerals and Energy)
DORA	Division of Revenue Act
DOT	Department of Transport
DPLG	Department of Local Government
DPE	Department of Public Enterprises
DPME	Department of Performance Monitoring and Evaluation
DPW	Department of Public Works
DSM	Demand Side Management
DTI / <b>the dti</b>	Department of Trade and Industry
DWS	Department of Water and Sanitation
EC	Eastern Cape
EE	Energy Efficiency
EDI	Electricity Distribution Industry
*EG	Embedded Generation
ESCO / ESCOs	Energy Services Company / Companies
Eskom	South African National Electricity Utility
GHG	Green House Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GW /h	Gigawatt and Gigawatt hour
IDC	Industrial Development Corporation
IDM	Integrated Demand Management
IEP	Integrated Energy Plan
INDC	Intended Nationally Determined Contribution
IPP	Independent Power Producer
IRP	Integrated Resource Plan (2010-2030)
LA	Local Authority (encompassing all categories of Municipalities)
*LCOE	Levelised Cost of Energy
M&E	Monitoring and Evaluation
M&V	Measurement and Verification
MW /h	Megawatt and Megawatt hour
MTEF	Medium-Term Expenditure Framework
MTSF	Medium-Term Strategic Framework
NDP	National Development Plan
NERSA	National Energy Regulator of South Africa
NGP	New Growth Path
NT	National Treasury
PESTLE	Political, Economic, Social, Technology, Legal and Environmental
*PPA	Power Purchase Agreement
PV	Photovoltaic
R&D	Research and Development
RDI	Research, Development and Innovation
RE	Renewable Energy
REIPPPP	Renewable Energy Independent Power Producer Procurement Programme
REEEP	Renewable Energy and Energy Efficiency Programme
SALGA	South African Local Government Association
SAGEN	South African-German Energy Programme
SARETEC	South African Renewable Energy Technology Centre
SASGI	South Africa Smart Grid Initiative
SEA	Sustainable Energy Africa
SHS	Solar Home Systems
SIPs	Strategic Integrated Projects





<b>Acronym</b>	<b>Description / definition</b>
SME	Small Medium Enterprise
SSEG	Small-scale Embedded Generation
SWH	Solar Water Heaters
SWOT	Strengths, Weaknesses, Opportunities, Threats
*TOU	Time-of-Use
UN	United Nations
UP	University of Pretoria
*WEPS	Wholesale Electricity Pricing System

\*As defined by NERSA 'Small-Scale Embedded Generation: Regulatory Rules' Consultation Paper, 2015



## Part A | Strategic overview



# 1 Strategic overview

The key elements of SANEDI’s Strategic Plan are captured in the Strategy Map below (Figure 1).

SANEDI’s strategic outcome-orientated goals and associated strategic objectives have been redefined during this planning cycle. Colours are used to indicate the programmes that contribute to each of the strategic objectives.

Vision	Leading smart responsive energy						
Mission	To provide energy knowledge-based solutions towards a sustainably responsive energy sector for improved quality of life for all in South Africa						
Values	<b>Innovative</b> (creative/proactive/taking charge/initiative/adaptive/entrepreneurial) <b>Integrity</b> (honest/ethical/accountable/transparent/responsible/trustworthy/respectful) <b>Scientific evidence driven</b> (analytical/rational/objective/factual/attentive) <b>Development oriented</b> (educative/continuous learning/transformational) <b>Consultative</b> (collaborative/participative/team work/engaging) <b>Productive</b> (punctual/cost conscious/disciplined/compliant) <b>Responsive</b> (courteous/friendly/client need driven/client focused) <b>Caring</b> (compassionate/friendly/client need driven/client focused)						
Goals	1. A resilient, efficient, effective and enabling delivery environment that is aligned to/complies with all statutory requirements				2. Energy innovation, knowledge and skills for a less carbon intensive, more environmentally sustainable, affordable and efficient energy system		
Strategic Objectives	1.1 An effective and efficient internal control environment	1.1 A team that is effectively staffed, competent, motivated and representative of the National demographics.	1.3 Effective risk management.	1.4. Effective stakeholder relations management.	2.1 Energy-related support, information and advice to inform high confidence energy planning, decision-making and policy development (including knowledge custodianship).	2.2 Accelerated clean energy transformation for sustainable economy.	3.1 Accelerated adoption of Energy Efficiency solutions to optimise the use of finite resources.

Legend:  Programme 1  Programme 2  Programme 3

Figure 1: SANEDI Strategy Map



## 2 Updated situational analysis

Energy is at the heart of development. Without energy, communities live in darkness, essential services such as hospitals can barely function and businesses operate under crippling constraints. Energy also makes possible the investments, innovations and new industries that are the drivers of job creation and economic growth.

According to the World Bank, one billion people live without electricity, hundreds of millions more live with insufficient or unreliable electricity and approximately 3 billion people cook or heat their homes with polluting fuels like wood or other biomass<sup>1</sup>.

Globally, the energy sector is going through a revolution. The World Energy Council's annual survey of global energy leaders indicates that innovation is the key area of concern. Issues such as digitalisation, electric storage, market design, decentralised systems, and renewable energies are receiving greater attention as their impact grows across the energy industry.

The International Energy Agency (IEA), states that the energy sector is becoming ever more electric. The energy sector must now provide more heat and transport energy from electricity to help global economies decarbonise and meet the targets of the Paris climate change agreement of keeping average temperature rises well below 2°C. The share of fossil fuels in the energy mix needs to fall to 40% by 2030, but despite this target it was slightly higher in 2017 than the previous year at 59%<sup>2</sup>

The global revolution in the sector presents both risks and opportunities, creating a context within which energy development and innovation is becoming increasingly important. These opportunities in particular, are pertinent to developing economies such as ours, where obsolete solutions can potentially be leapfrogged to a more sustainable energy future. Fully utilising the opportunities for maximum developmental benefit would require taking note of the global changes, anticipating the important shifts and skilfully adapting with the changes. Being at the forefront of energy development and innovation will therefore be key for South Africa to proactively engage with the rapid changes in the energy sector.

To realise our long-term vision of sustainable living for growth and prosperity in Africa, it becomes increasingly important for SANEDI to build the necessary skills and tools that will support industry decision-makers to better navigate the sector's transformation. This in turn requires a clear understanding of how policy, regulation, economics, technology and markets are transforming and how this will create opportunities and risks in the sector.

### 2.1 External environment

Unlike other developing regions in the world, South Africa stands alone in its one whole dependency on coal generation. The World Energy Council highlights that South Africa highly dependent on low-grade coal, that the country uses coal to generate a fifth of its liquid fuels, and that over three quarters of electricity supply comes from coal<sup>3</sup>.

According to the National Planning Commission (NPC), "the existing coal-dominated energy-mix in South Africa results in the majority of South Africa's greenhouse gas (GHG) emissions arising from energy supply/use (~80%) with the electricity sector alone making up 45%"<sup>4</sup>. The NPC support the World Energy Council's view by acknowledging that the high energy related GHG emission are primarily as a result of the use of significant currently cheap domestic coal resources for coal-fired power generation. The second major contributor to energy related GHG emissions in South Africa is the use of coal-to-liquids (CTL) technology for liquid fuel production in the transportation sector.

<sup>1</sup> <https://www.worldbank.org/en/topic/energy/overview>

<sup>2</sup> M. Scott, The Global Energy System Is Becoming More Electric, But Not Fast Enough, June 2018

<sup>3</sup> 2018 World Energy Issues Monitor

<sup>4</sup> National Planning Commission Economy Series: Energy, Version 1.0: January 2018



South Africa was one of 196 countries that adopted the Paris Agreement<sup>5</sup> in which the world agreed to chart a pathway to a low carbon energy system in mitigation against the impacts of climate change. This is a strong political signal, reinforcing South Africa's commitment to a low carbon energy future. Despite a significant dependency on coal the South African government is committed to addressing climate change through a determined effort to implement carbon tax, to replace its aging coal fleet with renewables, gas and new coal plants outfitted with carbon capture and storage. South Africa's policy direction and planning framework is aligned with international trends and aspirations, targeting a diversified mix less reliant on fossil fuels.

South Africa's policy and planning framework acknowledges energy and energy infrastructure development as a key priority to support the country's medium- and long-term economic and social objectives. Immediate energy development priorities, which are also reflected in the Department of Energy's (DoE) Strategic Plan, include:

- Security of energy supply (DoE Strategic Outcome-Orientated Goal 1, Security of Supply),
- Expanding access to energy (DoE Strategic Outcome-Orientated Goal 4, Universal Access and Transformation), and
- A diversified mix, less reliant on fossil fuels (DoE Strategic Outcome-Orientated Goal 4, Universal Access and Transformation; Goal 5, Environmental Assets; and Goal 6, Climate Change).

South Africa is currently experiencing a period of weak economic growth. The South African economy is closely linked to the mining industry and thus the issue of falling commodity prices is very important for the country. The weakness shown by commodity prices in 2017, and the fact that there is little indication of when they will strengthen in the near future, they pose high uncertainty for South Africa and the growth in the economy. The loss of jobs in the sector contribute to an already high unemployment rate.

South Africa has been experiencing severe drought over the past few years in different parts of the country and agriculture is an important contributor to both the economy and job creation. The issue of water shortage is a concern given that much of the energy generation in the country is by standard wet cooled power plant which need large volumes of water to operate.

Electricity prices continue to increase at above inflation rates while a weak currency is resulting in liquid fuels being more expensive. Electricity prices and energy affordability both feature high in the issues that need action.

The poor economic growth of the country has knock-on implications for poverty reduction and possibly social stability in the longer term. Energy has been described as the 'oxygen' of the economy and the life-blood of growth. Steady and reliable energy supplies are crucial to growth in developing and emerging economies such as our own. Accelerated transformation towards a green economy can contribute new avenues of economic prosperity.

Given South Africa's current economic reality, the development focus and available resources, investment in coal-based generation capacity will remain a necessity within the current planning horizon to 2030. While the share of electricity from coal is expected to reduce markedly (declining from 81% in 2010 to 46% in 2030), coal will continue to be a cornerstone of South Africa's energy portfolio for the foreseeable future. If South Africa is to meet its international climate change commitments, extensive measures will be required to mitigate against the associated emissions. One of the most important mitigation options under investigation is carbon capture and storage (CCS). South Africa is currently building regulatory capacity (under the DoE) and technical and human capacity (under SANEDI) with the immediate focus on the storage of carbon. South Africa's CCS initiative is supported by a comprehensive roadmap, targeting commercial roll-out by 2030.

New large-scale approaches that combine grid and off-grid electrification have contributed to impressive gains in energy access in a number of countries. In others, mini-grids are showing promise in closing the access gap. Solar home systems are increasing in efficiency as they decrease in cost – making them affordable to consumers in South Asia and Sub-Saharan Africa. According to the World Bank, "the new dynamics of energy, modern grids powered by increasingly large shares of renewable energy; broad programmatic approaches that are leading to significant

<sup>5</sup> Global agreement on the reduction of climate change reached at the 21st United Nations Climate Change Conference held in Paris in December 2015



expansions in energy access; a commitment to action at the municipal, sub-national, national and international levels; and sustained engagement and investment by the private sector – are leading to exciting new opportunities”<sup>6</sup>. While Renewable Energy (RE) in South Africa has become synonymous with large-scale, grid connected projects as constructed under the REIPPPP, RE can also be deployed on a smaller scale. Mini-grid and hybrid solutions have developed and are mature and thus offer opportunities for innovative energy solutions that can make a meaningful contribution to improved energy access. Here SANEDI can play a big role in investigating solutions suitable to South Africa.

It is widely acknowledged that South Africa has excellent RE resources, especially solar, wind and ocean. The questions now move on to the technical and monetary implications of these RE resources on system and grid operations, with a better understanding of the aggregated impact of RE and defining the role of storage.

South Africa is fortunate to be exposed through the REIPPPP to modern RE technologies (Wind, solar PV, Concentrated Solar Power, etc). This presents an opportunity for local RE technology R&D, value adding and skills transfer in the sector that has been encapsulated in various industry roadmaps. Further exploration of these opportunities remains to be explored to realise the full contribution to the green economy.

The gap between private-public engagements in the energy sector is also largely untapped, specifically in the municipal sector where service delivery could benefit from the inclusion of private sector companies assisting with municipal service delivery (e.g. private sector bringing in and operating new RE and EE technologies in waste water treatment plants).

At utility-scale, as procured by the REIPPPP, solar and wind technologies have dominated. The development of other technologies such as biomass, small-hydro and landfill gas have been slower than planned. There remain room for cost and technology improvements for these solutions to become more viable. There also remain numerous unexplored opportunities within the RE sector. Energy from waste, utilising the estimated 60 to 70 million m<sup>3</sup> of waste generated annually, that is readily available and currently under-utilised. Despite limited water availability, unexplored opportunities for micro-hydro applications at specific sites offer opportunities. South Africa also has a world-class wave (10 – 50 kW/m crest length) and ocean current (70 – 85 Sv peaking at 2 m/s) resources that are potentially exploitable upon the availability of commercially viable technologies. Towards developing and promoting also these RE technologies, SANEDI is participating in various Technology Collaboration Programmes of the IEA (including those for Bioenergy, Ocean Energy Systems and Solar Heating and Cooling) and, has established a number of industry platforms to facilitate industry collaboration, knowledge sharing and advancement, and is currently participating in the development and maintenance of Algal Bioenergy datasets. SANEDI is also working on the Wind Atlas of South Africa (WASA) and Ocean Energy resource assessment datasets.

South Africa implements a central energy planning paradigm with the strategic energy planning framework being defined by an overarching Integrated Energy Plan (IEP) that informs resulting plans, roadmaps and policy<sup>7</sup>. One of these is the Integrated Resource Plan (IRP) which is key as it directly informs policy direction and investment in the electricity sector. There is no promulgated version of the IEP while the most recent promulgated version of the IRP is currently more than 5 years old. Drafts of the IEP and IRP were published in late November 2016 with plans for updated versions of these to be submitted. SANEDI’s focus will be informed by these policy developments as they are finalised.

## 2.2 Internal environment

For the period from July 2017, with the resignation of the Chief Executive Officer (CEO), SANEDI has had an interim CEO appointed as per Section 11 (3) of the National Energy Act, 34 of 2008. Significant internal organisational challenges and developments which affected SANEDI’s performance over the MTSF period has been the reduction in

<sup>6</sup> <https://www.worldbank.org/en/topic/energy/overview>

<sup>7</sup> National Planning Commission Economy Series: Energy, Version 1.0: January 2018



MTEF allocations due to baseline adjustments across the board, resulting from fiscal pressures faced by National Treasury. This has had a negative impact on planned performance.

The lack of specialised industry specific technical skills in both core business and support functions makes SANEDI utilise consultants from time to time and often partner with universities to try and deal with the specialist skills gap. SANEDI is committed to resourcing the organisation appropriately to achieve its goals and therefore initiated an organisational review process during the 2018/19 financial year. It is envisioned that the recommendations from the organisational review will be implemented during the 2019/20 financial year.

## 2.3 Performance delivery environment

The National Development Plan (NDP) defines a desired development destination for the country and identifies the role different sectors of society need to play in reaching that goal. The NDP aims to eliminate poverty and reduce inequality by 2030. According to the plan, South Africa can realise these goals by drawing on the energies of its people, growing an inclusive economy, building capabilities, enhancing the capacity of the state, and promoting leadership and partnerships throughout society.

Outcome 6, as it relates to electricity infrastructure that supports efficient, competitive and responsive economic development, is the principal NDP-defined outcome relevant to the DoE.

In terms of this national planning context, SANEDI is aligned with the goals for energy and infrastructure development, security and diversity of energy supply. Energy research, development and innovation (RDI) seeks to develop a pipeline of demonstrated, viable clean energy solutions as well as high quality knowledge assets (data, data analyses, modelling, and studies) that can support development in the sector.

SANEDI's energy skills and capacity development and industry transformation focus further contributes to broader national sustainable development objectives of skills creation, green economy, localised industrialisation, and environment. As a consequence, SANEDI contributes directly and indirectly to seven of the 14 national outcomes as defined in the NDP. These include:

- Outcome 4, Decent employment through inclusive economic growth; In particular sub-outcome 10 (Research, development and innovation (RDI) investments supports inclusive growth);
- Outcome 5, A skilled and capable workforce to support an inclusive growth;
- Outcome 6, An efficient, competitive and responsive economic infrastructure network;
- Outcome 7, Vibrant, equitable, sustainable rural communities contributing towards food security for all;
- Outcome 8, Sustainable human settlements and improved quality of household life;
- Outcome 9, Responsive, accountable, effective and efficient developmental Local Government system;
- Outcome 10, Protect and enhance our environmental assets and natural resource; in particular sub-outcome 2 (An effective climate-change mitigation and adaptation response) and sub-outcome 3 (An environmentally sustainable, low carbon economy resulting from a well-managed, just transition).

Cognisant of the NDP and the 2014-19 MTSF, the DoE defined seven strategic goals and six programmes in their 2015 – 2020 Strategic Plan. SANEDI's programmes are principally contributory to five of these strategic goals:

- Goal 1: Security of supply. To ensure that energy supply is secure and demand is well managed.
- Goal 2: Infrastructure. To facilitate an efficient, competitive and responsive energy infrastructure network.
- Goal 3. Regulation and competition. To ensure that there is improved energy regulation and competition.
- Goal 4: Universal access and transformation. To ensure that there is an efficient and diverse energy mix for universal access within a transformed energy sector.
- Goal 5: Environmental assets. To ensure that environmental assets and natural resources are protected and continually enhanced by cleaner energy technologies.



In addition, SANEDI’s activities are contributory to three of the six DoE Programmes and relevant strategic objectives defined as:

DoE Programme	Relevant Strategic Objectives
<p>Programme 2: Energy policy and planning. Purpose. To ensure evidence-based planning, policy setting and investment decisions in the energy sector to improve energy security through supply- and demand-side management options and increase competition through regulation.</p>	<p><b>SO 2.1 To improve energy security.</b> To improve energy security by regulating demand and introducing a diversified mix of energy generation and EE technologies on an ongoing basis; increasing competition in the energy sector by introducing IPPs, using renewable technologies through a bidding process on an annual basis; planning interventions to expand energy infrastructure through the development of a policy framework for the IEP, IRP, the 20YLFIRM<sup>8</sup>, GUMP<sup>9</sup>, the TDP<sup>10</sup> and the Major Distribution Infrastructure Plan over the medium term; and publishing an Annual Energy Statistics Report to facilitate information-based decision-making.</p> <p><b>SO 2.2 To improve liquid fuels energy security by developing and implementing the liquid fuels 20-year infrastructure plan.</b> To improve energy security by regulating demand and introducing a diversified mix of energy generation and EE technologies on an ongoing basis; increasing competition in the energy sector by introducing IPPs, using renewable technologies through a bidding process on an annual basis; planning interventions to expand energy infrastructure through the development of a policy framework for the IEP, IRP, the 20YLFIRM, GUMP, the TDP and the Major Distribution Infrastructure Plan over the medium term; and publishing an Annual Energy Statistics Report to facilitate information-based decision-making.</p> <p><b>SO 2.4 To review the bulk electrical infrastructure required for the universal access to electricity.</b> To address current &amp; envisaged energy supply &amp; distribution constraints by developing the planned ADAM<sup>11</sup> for the rehabilitation of critical municipal electricity distribution infrastructure.</p>
<p>-Programme 4: Electricity and energy programme and project management.</p>	<p><b>SO 4.1 To ensure access to electricity by households</b></p> <p><b>SO 4.3 To monitor energy infrastructure development.</b> Monitoring the implementation of energy projects emanating from the Ministerial determination, including the current REIPPPP, future cogeneration &amp; coal &amp; gas IPP projects.</p>
<p>Programme 6: Clean energy.</p>	<p><b>SO 6.1 To coordinate &amp; monitor the implementation of energy-related climate change response measures and environmental compliance.</b> To manage climate change &amp; environmental compliance matters by: developing &amp; implementing energy-related climate change response strategies &amp; environmental management plans; publishing climate change response strategies &amp; environmental management plans.</p> <p><b>SO 6.2 To coordinate &amp; monitor the implementation of the EEDSM (Energy Efficiency and Demand Side Management) measures across all sectors.</b> To promote &amp; facilitate EEDSM by: planning &amp; developing interventions to increase energy savings on an ongoing basis; developing policies to increase the impact of EEDSM strategies by 2015; developing &amp; implementing incentive schemes; implementing demand response &amp; voltage power factor methodologies; implementing EE programmes measurement verification.</p> <p><b>SO 6.3 Effective Renewable Energy.</b> To ensure the integration of RE in the mainstream energy supply of South Africa by planning and coordinating initiatives and interventions focused on the development and improvement of the RE market.</p>

The following table summarises how SANEDI’s outputs align with the NDP and various outcomes of the MTSF for 2014 – 2019.

<sup>8</sup> 20YLFIRM | Twenty Year Liquid Fuels Infrastructure Road Map

<sup>9</sup> GUMP | Gas Utilisation Master Plan

<sup>10</sup> TDP | Transmission Development Plan

<sup>11</sup> ADAM | Advanced Distribution Asset Management





SANEDI Goals	SANEDI Strategic Objectives (SO)	Linkages to NDP	Linkages to the MTSF 2014 – 2019 (Outcomes)	SANEDI Programme Performance Indicators
<p>Energy innovation, knowledge and skills for a less carbon intensive, more environmentally sustainable, affordable and efficient energy system.</p>	<p><b>SO 2.1</b> Energy-related support, information and advice to inform high confidence energy planning, decision-making and policy development.</p>	<p><b>Chapter 3. Economy and employment</b>                      “South Africa needs faster growth and more inclusive growth. Key elements of this strategy include improving skills development, <b>lowering the costs of living for the poor</b>, investing in a competitive infrastructure.”</p> <p>The NDP identifies the main cost drivers for poor household are food and energy and, given the apartheid spatial legacy, the cost of transport.</p> <p>The NDP furthermore targets (i) economic participation in rural areas and (ii) human settlements and services that are conducive to small- and medium enterprise expansion. <b>Both will rely on the availability of energy and energy infrastructure.</b></p>	<p>Outcome 4. Decent employment through inclusive economic growth.</p> <p>Outcome 4, Sub-outcome 10. Research, development and innovation (RDI) investments support inclusive growth.</p>	<p>2.1.1 Number of energy solutions assessed.</p> <p><i>(The outputs from SANEDI under this indicator are serving to <b>support / inform</b> planning and the development of <b>solutions for rural energisation</b>, most notably solutions tested and demonstrated under the <b>Working for Energy and RE Programmes</b>.)</i></p>
		<p><b>Chapter 4. Economic infrastructure – the foundation of social and economic development.</b></p> <p>The chapter sets objectives for electrification, RE and transport as follows:</p> <ul style="list-style-type: none"> <li>- The proportion of people with access to the electricity grid should rise to at least 90% by 2030, with <b>non-grid options available for the rest.</b></li> <li>- At least 20,000 MW new electricity capacity from RE options.</li> <li>- The proportion of people who use public transport for regular commutes will expand significantly by 2030; public transport will be user friendly, <b>less environmentally damaging</b>, cheaper and integrated or seamless.</li> </ul>	<p>Outcome 6. An efficient, competitive and responsive economic infrastructure network.</p> <p>Outcome 6, Sub-outcome 2. SIP 8: Green Energy in support of the South African economy.</p> <p>Outcome 6, Sub-outcome 2. SIP 10: Electricity Tx and Dx for all. Review bulk electrical infrastructure required for universal access to electricity.</p> <p>Outcome 6, Sub-outcome 2. Refine, update and implement the Integrated Resource Plan (IRP).</p> <p>Outcome 6, Sub-outcome 2. Ring-fence the electricity distribution businesses of the 12 largest municipalities and resolve their maintenance and refurbishment backlogs.</p>	<p>2.1.1 Number of energy solutions assessed.</p> <p>2.1.2 Number of industry insights (trends) publications reflecting insights from extensive international collaboration, interfacing and forums.</p> <p>2.1.3 Number of datasets maintained.</p> <p>2.1.4 Number of analyses/reports produced from datasets.</p> <p><i>(The outputs from SANEDI under these indicators are serving to <b>support / inform</b> the development of infrastructure and planning, e.g.:</i>                      (i) <b>WASA</b> as key information to support wind power generation,                      (ii) <b>Smart grids</b> as critical enabler to facilitate the integration of clean energy onto the power networks,                      (iii) <b>Smart grids</b> as an intrinsic part of future electricity distribution businesses and asset management, and</p>



SANEDI Goals	SANEDI Strategic Objectives (SO)	Linkages to NDP	Linkages to the MTSF 2014 – 2019 (Outcomes)	SANEDI Programme Performance Indicators
<p>Energy innovation, knowledge and skills for a less carbon intensive, more environmentally sustainable, affordable and efficient energy system.</p>	<p><b>SO 2.1</b> Energy-related support, information and advice to inform high confidence energy planning, decision-making and policy development</p>		<p>Outcome 6, Sub-outcome 3. Maintenance, strategic expansion, operational efficiency, capacity and competitiveness of our transport infrastructure ensured. Improve national transport planning in the context of the National Infrastructure Plan to develop long-term plans for transport that synchronise with spatial planning, align infrastructure investment activities of provincial and local government, and clearly communicate the state’s transport vision to the private sector.</p>	<p>(iv) <b>Clean mobility</b> inputs to a national green transport strategy.)</p>
		<p><b>Chapter 6. An integrated and inclusive rural economy.</b></p> <p>The chapter requires improved infrastructure and service delivery as key inputs to the achievement of rural economies.</p>	<p>Outcome 7. Vibrant, equitable, sustainable rural communities contributing towards food security for all.</p> <p>Outcome 7, Sub-outcome 5. Increased access to quality infrastructure and functional services, particularly in education, healthcare and public transport in rural areas. Number of rural households <b>linked to grid or microscheme</b> (electricity).</p> <p>Sub-outcome 5. Increased access to quality infrastructure and functional services, particularly in education, healthcare and public transport in rural areas. Number of rural households connected <b>with off-grid technology</b></p>	<p>2.1.1 Number of energy solutions assessed.</p> <p>(The outputs from SANEDI under this indicator are serving to <b>support / inform</b> the development and planning of <b>solutions for rural electrification</b>, most notably solutions tested and demonstrated under the <b>Working for Energy Programme</b>.)</p>
		<p><b>Chapter 8. Transforming human settlement and the national space economy.</b></p> <p>The chapter foresees most South Africans having affordable access to services and quality environment by 2030. It targets better quality public transport and</p>	<p>Outcome 8. Sustainable human settlements and improved quality of household life.</p> <p>Outcome 8, Sub-outcome 1. Adequate housing and improved quality living environments; Include access to basic water, sanitation, roads and energy</p>	<p>2.1.1 Number of energy solutions assessed.</p> <p>(The outputs from SANEDI under the above indicator are serving to <b>support / inform</b> the development planning and solutions for <b>rural electrification and low income urban energy solutions</b>, most notably solutions tested and</p>



SANEDI Goals	SANEDI Strategic Objectives (SO)	Linkages to NDP	Linkages to the MTSF 2014 – 2019 (Outcomes)	SANEDI Programme Performance Indicators
<p>Energy innovation, knowledge and skills for a less carbon intensive, more environmentally sustainable, affordable and efficient energy system.</p>	<p>SO 2.1 Energy-related support, information and advice to inform high confidence energy planning, decision-making and policy development.</p>	<p>environmentally sustainable living and working environments.</p>	<p>infrastructure and services in new developments. All new developments have basic water, sanitation, roads and energy infrastructure and services.</p>	<p><i>demonstrated under the Working for Energy and RE programmes.)</i></p>
		<p><b>Chapter 13. Building a capable and developmental state.</b></p> <p>The chapter focuses on creating a state that is capable of playing a developmental and transformative role.</p>	<p>Outcome 9. Responsive, accountable, effective and efficient developmental Local Government system.</p> <p>Outcome 9, Sub-outcome 1. Members of society have sustainable and reliable access to basic services (both grid and non-grid energy supply).</p> <p>Outcome 9, Sub-Outcome 3. Sound financial and administrative management of municipalities. Number of municipalities that improve their audit outcomes.</p>	<p>2.1.1 Number of energy solutions and technologies assessed and demonstrated.</p> <p><i>(The outputs from SANEDI under this indicator are serving to support / inform energy solutions for low income households, most notably solutions tested and demonstrated under the Working for Energy Programme, and energy solutions for improved financial and administrative management of municipalities, e.g. smart grid solutions for revenue and asset management by municipalities).</i></p>
		<p><b>Chapter 5. Environmental sustainability – an equitable transition to a low-carbon economy.</b></p> <p>The NDP chapter recognises the importance of a just transition towards a low carbon economy. It specifically makes reference to the following relevant actions:</p> <p>(i) Building standards, (ii) vehicle emission standards, (iii) achieving scale in stimulating RE, (iv) waste recycling and in retrofitting buildings, (v) a wider range of policy instruments to drive EE and (vi) channelling public investment to research.</p> <p>The chapter makes specific reference to the Working for Energy Programme flagship project.</p>	<p>Outcome 10. Protect and enhance our environmental assets and natural resource.</p> <p>Outcome 10, Sub-outcome 2. An effective climate-change mitigation and adaptation response. Develop a Strategic Policy and Regulatory frameworks and programmes to promote a low carbon economy.</p> <p>Outcome 10, Sub-outcome 3. An environmentally sustainable, low carbon economy resulting from a well-managed, just transition. Promote a just transition to an environmentally sustainable economy. High impact environmental sustainability research, evidence gathering and systematic review commissioned.</p> <p>Outcome 10. Percentage of new build that is renewable power generation (to incorporate off-grid energy).</p>	<p>2.1.1 Number of energy solutions assessed.</p> <p>2.1.2 Number of industry insights (trends) publications reflecting insights from extensive international collaboration, interfacing and forums.</p> <p>2.1.3 Number of current datasets maintained.</p> <p>2.1.4 Number of analyses/reports produced from datasets.</p> <p><i>(The outputs from SANEDI under these indicators are serving to support / inform planning and policy frameworks e.g. Carbon Capture and Storage; Waste-to-Energy solutions and Working for Energy off-grid energy solutions).</i></p>



SANEDI Goals	SANEDI Strategic Objectives (SO)	Linkages to NDP	Linkages to the MTSF 2014 – 2019 (Outcomes)	SANEDI Programme Performance Indicators
<p>Energy innovation, knowledge and skills for a less carbon intensive, more environmentally sustainable, affordable and efficient energy system.</p>	<p><b>SO 2.2</b> Accelerated transformation to a less energy and carbon intensive economy.</p>	<p><b>Chapter 3. Economy and employment</b>                      “South Africa needs faster growth and more inclusive growth. Key elements of this strategy include <b>improving skills development</b>, lowering the costs of living for the poor, investing in a competitive infrastructure.”</p> <p>Substantial investment in research and development and the commercialisation of South African innovations are recognised as key contributors to economic growth. It states that: “Continuous learning and innovation are essential ingredients for the success of middle- and upper income economies. A substantial research and development sector, with support for the commercialisation of innovation, is essential.”</p> <p>The chapter further requires the promotion of skills development for new sectors with a focus on high-technology skills advancement.</p> <p>Chapter 3 also deals with the green economy in the context of a new and growing sector within the South African economy. The NDP proposes that the green economy agenda be leveraged to promote deeper industrialisation, EE and employment.</p>	<p>Outcome 4. Decent employment through inclusive economic growth.</p> <p>Outcome 4, Sub-outcome 10. Research, development and innovation (RDI) investments support inclusive growth.</p>	<p>2.2.1 Number of industry roadmaps, sector development plans and industry support tools developed to promote energy-related market/industry development.</p> <p>2.2.2 Number of industry knowledge sharing events or platforms hosted to promote energy-related market/industry development.</p> <p>2.2.3 Number of commercially viable cleantech concepts, technologies or solutions progressed to active business incubation and/or deployment.</p> <p>2.2.4 Number of recipients of energy-related training offered or facilitated by SANEDI.</p> <p>2.2.5 Number of active researchers contributing to energy research leadership supported/enabled by a SANEDI programme.</p>



SANEDI Goals	SANEDI Strategic Objectives (SO)	Linkages to NDP	Linkages to the MTSF 2014 – 2019 (Outcomes)	SANEDI Programme Performance Indicators
<p>Energy innovation, knowledge and skills for a less carbon intensive, more environmentally sustainable, affordable and efficient energy system.</p>	<p><b>SO 2.2</b> Accelerated transformation to a less energy and carbon intensive economy.</p>	<p><b>Chapter 9, improving education, training and innovation</b></p> <p>The chapter states that <b>education, training and innovation are central</b> to South Africa’s long-term development. It furthermore encourages a greater understanding within government to acknowledge the importance of science and technology and higher education in leading and shaping the future of modern nations. Government departments need to work together to develop a broad enabling framework and policy that encourages world-class research and innovation.</p> <p>Actions include: Build a properly qualified, professional, competent and committed teaching, academic, research and public service core.</p> <p>Develop world-class centres and programmes in the national system of innovation and higher education sector.</p> <p>Expand the production of highly skilled professionals and enhance the innovative capacity of the nation.</p> <p>Create an educational and national science system that serves the needs of society. Increase participation rate in higher education to more than 30%, double the number of scientists and increase the numbers of African and women post graduates, especially PhDs, to <b>improve research and innovation capacity</b>.</p>	<p>Outcome 5, A skilled and capable workforce to support an inclusive growth.</p> <p>Outcome 5. Number of headcount enrolments in TVET Colleges (DHET)</p> <p>Outcome 5. Number of students enrolled in public higher education studies universities by 2018/19</p> <p>Outcome 5. Number of Research Masters graduates (DHET)</p>	<p>2.2.4 Number of recipients of energy-related training facilitated by SANEDI</p> <p>2.2.5 Number of active researchers contributing to energy research leadership supported/enabled by a SANEDI programme.</p> <p>2.2.3 Number of commercially viable cleantech concepts, technologies or solutions progressed into active business incubation and/or deployment.</p>



SANEDI Goals	SANEDI Strategic Objectives (SO)	Linkages to NDP	Linkages to the MTSF 2014 – 2019 (Outcomes)	SANEDI Programme Performance Indicators
<p>Energy innovation, knowledge and skills for a less carbon intensive, more environmentally sustainable, affordable and efficient energy system.</p>	<p><b>SO 2.2</b> Accelerated transformation to a less energy and carbon intensive economy</p>	<p><b>Chapter 5: Environmental sustainability and resilience</b></p> <p>The NDP chapter recognises the importance of a just transition towards a low carbon economy. It specifically makes reference to the following relevant actions:</p> <p>(i) Building standards, (ii) vehicle emission standards, (iii) achieving scale in stimulating RE, (iv) waste recycling and in retrofitting buildings, (v) a wider range of policy instruments to drive EE and (vi) channelling public investment to research.</p>	<p>Outcome 10, Sub-outcome 2. An effective climate-change mitigation and adaptation response. Develop a Strategic Policy and Regulatory frameworks and programmes to promote a low carbon economy.</p> <p>Outcome 10, Sub-outcome 3. An environmentally sustainable, low carbon economy resulting from a well-managed, just transition. Promote a just transition to an environmentally sustainable economy.</p>	<p>2.2.1 Number of industry roadmaps, sector development plans, industry development/support tools developed to promote energy-related market/industry development.</p> <p>2.2.2 Number of industry knowledge sharing events or platforms hosted to promote energy-related market/industry development.</p> <p>2.2.3 Number of commercially viable cleantech concepts, technologies or solutions progressed to active business incubation and/or deployment.</p>
	<p><b>SO 3.1</b> Accelerated adoption of EE solutions to optimise the use of finite resources.</p>	<p><b>Chapter 4. Economic infrastructure – the foundation of social and economic development.</b></p> <p>The chapter describes the energy sector by 2030 that promotes:</p> <p>(i) Economic growth and development through adequate investment in energy infrastructure and the provision of quality energy services that are competitively prices, reliable and <b>efficient</b>.</p> <p>(ii) <b>Environmentally sustainable</b> through efforts to <b>reduce pollution</b> and mitigate the effects of climate change.</p>	<p>Outcome 6. An efficient, competitive and responsive economic infrastructure network.</p> <p>Outcome 6, sub-outcome 2. Improved demand-side management, including through smarter management of electricity grids.</p>	<p>3.1.1 Number of EE solutions implemented.</p> <p>3.1.2 Number of EE solutions assessed.</p> <p>3.1.4 Number of EE datasets maintained.</p> <p>3.1.5 Number of EE analyses/reports produced from datasets.</p> <p>3.1.6 Number of industry roadmaps, sector development plans and industry support tools developed to promote EE-related market/industry development.</p> <p>3.1.7 Number of industry knowledge sharing events or platforms hosted to promote EE-related market/industry development.</p> <p>3.1.8 Number of recipients of EE-related training facilitated by SANEDI.</p> <p>3.1.9 Number of active researchers contributing to EE research leadership supported/enabled by a SANEDI programme.</p>



SANEDI plays a leading role in identified near-term priority flagship programmes as defined in the National Climate Change Response Policy White Paper, 2011. These are:

- The Climate Change Response Public Works Flagship Programme: **Working for Energy**
- The EE and EEDSM Flagship Programme: **SANEDI energy efficiency**
- The Carbon Capture and Sequestration Flagship Programme: **SANEDI’s Carbon Capture and Storage programme**

In addition, SANEDI contributes to the Industrial Policy Action Plan (IPAP) in the following areas:

- Smart grids
- Cleaner mobility

**STRATEGIES TO ADDRESS GAPS ON KEY FOCUS AREAS**

SANEDI has four core business focus areas and one non-core business focus area which are identified and broken down into sub-focus areas for each. This framework is comprehensive, but mutually exclusive focus areas. This framework was used as a basis from which priority strategic actions were formulated.

**Focus area 1: Energy applied-knowledge creation**

KEY SUB-FOCUS AREA	ACTIONS
<b>Policy support research</b>	<ul style="list-style-type: none"> <li>• Ensure evidence based results for policy input</li> <li>• Track energy technology developments for input into policy consideration</li> </ul>
<b>Energy related research</b> <i>(Energy efficiency, energy generation, energy use, publications, reports, etc.)</i>	<ul style="list-style-type: none"> <li>• Develop a SANEDI wide applied energy research plan aligned to government objectives (specific niches, research focus, cost, priorities)</li> <li>• Position SANEDI as the “go-to” institution for knowledge-based energy solutions</li> </ul>
<b>Knowledge custodianship</b>	<ul style="list-style-type: none"> <li>• SANEDI to become recognised as the go-to institution for knowledge based energy solutions</li> <li>• Develop a plan to improve knowledge management within SANEDI</li> </ul>

**Focus area 2: Energy sector capacity development**

KEY SUB-FOCUS AREA	ACTIONS
<b>Energy research capacity development</b> <i>(Researchers, product developers, SMME’s – training, sourcing, succession planning, mentorships, etc.)</i>	<ul style="list-style-type: none"> <li>• Develop a plan to enable new technology capacity development</li> <li>• Develop a stakeholder collaboration plan to develop SMME’s, entrepreneurs, technology beneficiaries</li> <li>• Develop an energy technology and services supplier development plan</li> <li>• Promote new technology curriculum development at institutions for higher learning</li> </ul>
<b>Funding coordination</b>	<ul style="list-style-type: none"> <li>• SANEDI Board to facilitate access to sufficient fiscal funding</li> <li>• Develop a plan to leverage donor funding</li> </ul>
<b>Energy infrastructure development</b>	<ul style="list-style-type: none"> <li>• Develop a plan to establish and coordinate a conducive energy research infrastructure</li> </ul>
<b>National / international collaboration</b>	<ul style="list-style-type: none"> <li>• Develop a plan to establish and maintain strategic national and international collaborations</li> </ul>

**Focus area 3: Energy solutions provision**

KEY SUB-FOCUS AREA	ACTIONS
<b>Energy solution development</b> <i>(Including solution assessment, prototype, demonstration, testing, patents, etc.)</i>	<ul style="list-style-type: none"> <li>• Improve access to donor funding</li> <li>• Establish energy solution development partnerships</li> <li>• Limit research scope to identified problems / needs in the public sector</li> <li>• SANEDI not competing with local and global patenting market</li> </ul>
<b>Energy solution deployment</b>	<ul style="list-style-type: none"> <li>• Develop a comprehensive record of deployed SANEDI technology</li> </ul>
<b>Energy solution commercialisation</b> <i>(Licencing, intellectual property)</i>	<ul style="list-style-type: none"> <li>• Collaborate with key stakeholders (e.g. TIA, SABS, DTI, DEA, CSIR, DoSBD, regulatory bodies) to commercialise and license energy solutions</li> </ul>


**Focus area 4: National energy awareness creation**

KEY SUB-FOCUS AREA	ACTIONS
<b>Sector knowledge sharing events / platforms</b>	<ul style="list-style-type: none"> <li>• A plan to be well represented at strategic knowledge sharing events / platforms</li> </ul>
<b>Consumer / beneficiary education</b>	<ul style="list-style-type: none"> <li>• Develop proactive identifiable collaborations with key government departments to create awareness on energy</li> </ul>

**Focus area 5: To ensure institutional excellence within SANEDI**

KEY SUB-FOCUS AREA	ACTIONS
<b>Institutional management / leadership</b> <i>(Institutional positioning, culture development, institutional performance management, corporate communication / stakeholder engagement, corporate governance)</i>	<ul style="list-style-type: none"> <li>• Implement a stable goals and objectives framework</li> </ul>
	<ul style="list-style-type: none"> <li>• A plan to improve SANEDI image with key stakeholders</li> </ul>
	<ul style="list-style-type: none"> <li>• Improve alignment and relationship between SANEDI and key national stakeholders (e.g. DOE, DTI, DST, DoT, DEA, NT)</li> </ul>
	<ul style="list-style-type: none"> <li>• Develop a corporate communication plan for SANEDI</li> </ul>
	<ul style="list-style-type: none"> <li>• Develop an organisation structure that aligns with SANEDI goals and objectives</li> </ul>
	<ul style="list-style-type: none"> <li>• Develop a plan to instil / foster an institutional culture that aligns with its core values</li> </ul>
	<ul style="list-style-type: none"> <li>• Foster good team work between board and operational staff</li> </ul>
	<ul style="list-style-type: none"> <li>• Improve good corporate governance practices (including risk management and security management of staff and infrastructure)</li> </ul>
	<ul style="list-style-type: none"> <li>• Align SANEDI's programme outputs with socio-economic and social justice imperatives</li> </ul>
<b>Resource management</b> <b>HR management</b>	<ul style="list-style-type: none"> <li>• Effectual alignment of SANEDI's resources with determined scope</li> </ul>
	<ul style="list-style-type: none"> <li>• Align remuneration with other SOE's</li> </ul>
	<ul style="list-style-type: none"> <li>• Implement clear job descriptions (management and technical)</li> </ul>
	<ul style="list-style-type: none"> <li>• Implement clear succession planning within SANEDI</li> </ul>
	<ul style="list-style-type: none"> <li>• Improve staff morale (less insecurities / fear)</li> </ul>
	<ul style="list-style-type: none"> <li>• Implement approved HR policies</li> </ul>
	<ul style="list-style-type: none"> <li>• A plan to fill approved positions</li> </ul>
<b>Financial management</b>	<ul style="list-style-type: none"> <li>• Develop a training and development plan for staff aligned to business needs</li> </ul>
	<ul style="list-style-type: none"> <li>• Ensure a more transformative allocation of institutional funding?</li> </ul>
<b>Technology management</b>	<ul style="list-style-type: none"> <li>• Align budget spent with SANEDI strategic goals and objectives</li> </ul>
	<ul style="list-style-type: none"> <li>• Implement plans to acquire and maintain required technology (ICT, etc.)</li> </ul>
<b>Institutional information management</b>	<ul style="list-style-type: none"> <li>• Improve document management</li> </ul>
	<ul style="list-style-type: none"> <li>• Improve website content</li> </ul>
	<ul style="list-style-type: none"> <li>• Implement the information security plan</li> </ul>
<b>Infrastructure / facilities management</b>	<ul style="list-style-type: none"> <li>• Implement a plan to ensure the smooth relocation to the new institutional premises</li> </ul>
<b>Programme / project management</b>	<ul style="list-style-type: none"> <li>• A plan to develop an automated project management system</li> </ul>





## 2.4 Organisational environment

SANEDI is an implementation agency of Government, specifically the DOE, established under the National Energy Act, 2008 (No. 34 of 2008), with a dual focus:

- Energy efficiency
- Energy research, development and innovation

Energy innovation and energy conservation/efficiency are two key building blocks of sustainable energy solutions. These two focus areas are reflected in the high level organisational structure (Figure 2) with EE and Applied Energy, Research, Development, Demonstration and Deployment as the two main operational areas.

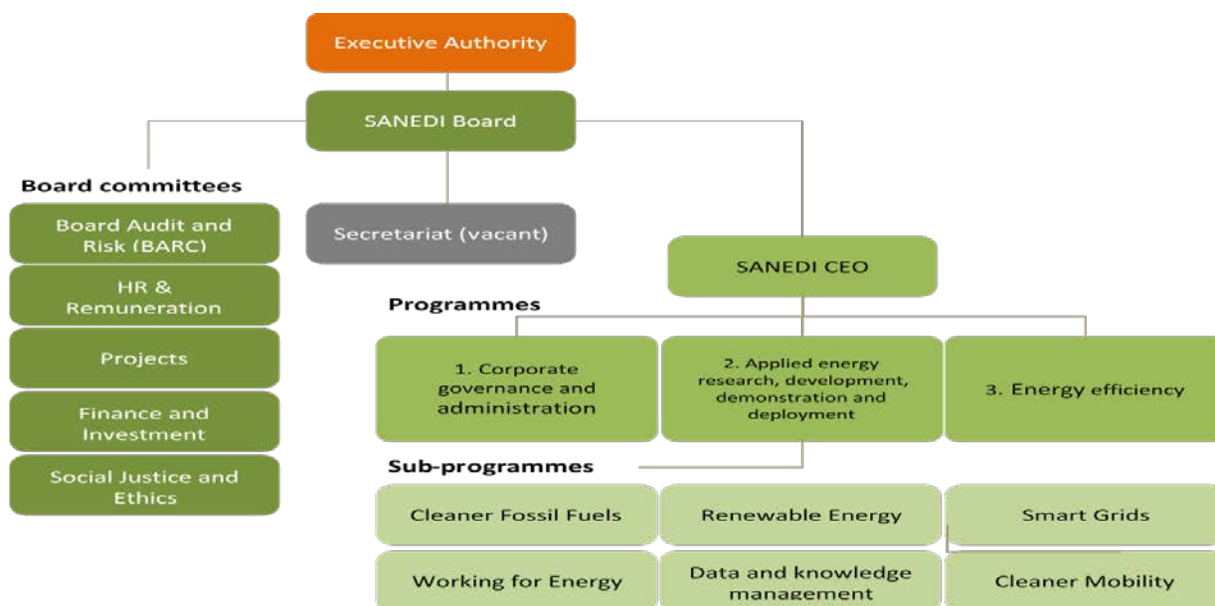


Figure 2: SANEDI organisational structure

In South Africa's existing research and innovation context, SANEDI focuses primarily on applied energy research as well as development, demonstration and deployment. Select activities of SANEDI Energy Efficiency Programme and the Working for Energy sub-programme will also promote technology deployment, i.e. market entry and penetration, of new clean energy and EE solutions.

SANEDI's operating structure is based on the matrix<sup>12</sup> management model. Effectively this structure establishes a pool of people who can be utilised across the different functional areas to optimise the limited capacity and the available skills set and to allow for greater development opportunities.

SANEDI acknowledges that the structure introduces a higher level of internal complexity and additional management challenges, but these are considered manageable with the small permanent staff complement. As the number of employees increase, this model may be reconsidered and adjusted to suit the changing environment.

The operational model SANEDI has chosen also relies on the establishment of Centres of Research and Development (CORDs)<sup>13</sup>. The CORDs are structured as partnerships between SANEDI, universities and industry. These centres, either located within SANEDI or externally, relies on human capital to provide for key services. It is the objective of SANEDI to leverage additional funds, from sources such as donors, Development Finance Institutions (DFIs), the National Research Foundation (NRF) and Sector Education and Training Authorities (SETAs),

<sup>12</sup> In the matrix structure, the personnel and other resources that a project manager requires are not permanently assigned to the project, but are obtained from a pool controlled and monitored by a functional manager. Personnel required to perform specific functions in a particular project are detailed for the period necessary, and are then returned to the control of the functional manager for reassignment

<sup>13</sup> Three CORDs are active i.e.: RECORD, the Centre for Energy System Analysis and Research (CESAR) in collaboration with the University of Cape Town and the Energy Research Centre (ERC) and the Energy Efficiency Demand-side Management (EEDSM) Hub in collaboration with University of Pretoria.



etc. to enhance the capacity available to these CORDs. Many of the postgraduate students graduating today have little prospect of finding employment at the university itself. This is simply due to the numbers of students that graduate and the ever-present budget constraints that limit employment opportunities at these institutions. SANEDI, through its CORDs, intends deploying some of the postgraduate students that are currently funded by SANEDI in the tertiary institution itself. In so doing, the student will continue to add to the body of knowledge and also be a research resource for SANEDI. The payment of remuneration that is more in line with market norms, will also serve to aid in staff retention.

## **2.5 Description of the strategic planning process**

This APP planning process sets out to refine SANEDI's performance framework to ensure that measurable and meaningful energy development contribution is made to the energy sector. Performance measures have been structured around delivery of a portfolio of energy development solutions and knowledge; building industry capacity for clean energy solutions; improved EE; and the timely and credible delivery of various business support functions. The refined structure should provide a consistent framework against which to track progress, outputs, and outcomes, serving to streamline performance measurement and reporting for the organisation.

## **3 Revisions to legislative and other mandates**

The National Energy Act, 2008 (Act No. 34 of 2008), Section 7 (2) gave effect to SANEDI's existence and provides for its primary mandate and specific responsibilities. The Act provides for SANEDI to direct, monitor and conduct energy research and development, promote energy research and technology innovation as well as undertake measures to promote EE throughout the economy.

There has been no changes to the legislative or other mandates as reflected in the 2014 – 2019 Five-year Strategic Plan.



## 4 Overview of 2019/20 budget and MTEF estimates

### 4.1 Expenditure estimate

	2015/16		2016/17		2017/18		2018/19			2019/20			2020/21			2021/22
	Budget	Audited Outcome	Budget	Audited Outcome	Budget	Audited Outcome	Budget estimate	Approved budget	Changes from approved budget	Budget estimate	Revised budget estimate	Changes from budget estimate	Budget estimate	Revised budget estimate	Changes from budget estimate	Planning Budget Estimate
Rand thousand																
<b>Objective/Activity</b>	-															
Administration	-	52,100	55,807	80,713	40,083	50,417	42,328	40,653	(1,675)	44,698	45,304	606	50,606	50,606	-	53,915
Develop human capacity and investment in relevant energy research and development	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cleaner Fossil Fuels	-	12,190	134,840	2,997	99,783	14,731	77,621	87,978	10,357	81,970	106,969	24,999	92,721	101,233	8,512	106,950
Energy efficiency programme	-	7,305	9,560	4,784	12,315	631	14,860	7,384	(7,476)	15,693	7,790	(7,903)	8,663	8,663	-	9,292
Smart grids	-	81,283	77,410	12,885	53,679	53,482	5,385	5,433	48	5,687	5,788	101	6,163	6,163	-	6,594
Working for Energy	-	16,875	6,512	1,220	4,654	6,735	4,983	5,741	758	5,262	5,929	667	7,141	6,255	(886)	6,652
Clean Energy Solutions Centre for Energy Systems Analysis and Research	-	36,252	29,863	3,112	21,469	14,633	22,358	20,852	(1,506)	23,610	5,203	(18,407)	6,959	5,568	(1,391)	9,938
Analysis and Research	-	2,157	5,060	3,900	5,138	1,744	4,928	3,688	(1,240)	2,416	4,618	2,202	5,984	5,984	-	4,412
Cleaner Mobility	-	-	-	821	-	1,721	-	2,601	2,601	-	2,505	2,505	2,933	2,677	(256)	2,491
Shale gas	-	4,199	5,600	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	-	<b>212,361</b>	<b>324,652</b>	<b>110,432</b>	<b>237,121</b>	<b>144,094</b>	<b>172,463</b>	<b>174,330</b>	<b>1,867</b>	<b>179,336</b>	<b>184,106</b>	<b>4,770</b>	<b>181,170</b>	<b>187,149</b>	<b>5,979</b>	<b>200,244</b>



	2015/16		2016/17		2017/18		2018/19			2019/20			2020/21			2021/22
	Budget	Audited Outcome	Budget	Audited Outcome	Budget	Preliminary outcome	Approved budget	Final budget	Changes from approved budget	Budget estimate	Revised budget estimate	Changes from budget estimate	Budget estimate	Revised budget estimate	Changes from budget estimate	Planning Budget Estimate
Rand thousand																
<b>Economic classification</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Current payments</b>	316,550	212,361	324,652	110,432	237,121	144,095	172,463	174,031	1,568	179,336	179,005	(331)	181,170	181,170	0	192,670
Compensation of employees	45,711	44,638	51,961	49,637	46,512	47,084	49,347	50,233	886	52,113	50,735	(1,378)	65,094	54,103	(10,991)	57,540
Salaries and wages	45,711	44,638	51,961	49,637	46,512	47,084	49,347	50,233	886	52,113	50,735	(1,378)	65,094	54,103	(10,991)	57,540
Social contributions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Goods and services	267,091	163,461	267,084	59,450	188,220	97,012	120,593	121,278	685	124,559	125,611	1,052	113,271	124,262	10,991	132,157
Of which <sup>1</sup>																
Administrative fees	-	-	-	-	-	10,441	-	-	-	-	-	-	-	-	-	-
Advertising	-	-	-	-	-	2,004	-	-	-	-	-	-	-	-	-	-
Agency and support/ outsourced services	2,991	1,636	1,482	1,462	1,701	-	1,801	5,278	3,477	1,902	5,366	3,464	5,613	5,613	-	5,956
Audit costs	-	-	-	-	-	1,636	-	-	-	-	-	-	-	-	-	-
Bank charges	-	-	-	-	-	75	-	-	-	-	-	-	-	-	-	-
Board costs	-	-	-	-	-	906	-	-	-	-	-	-	-	-	-	-
Bursaries (employees)	-	-	-	-	-	(77)	-	-	-	-	-	-	-	-	-	-
Catering: internal activities	-	-	-	-	-	94	-	-	-	-	-	-	-	-	-	-
Communication	-	577	1,391	416	734	-	750	787	37	792	850	58	879	879	-	931
Computer services	-	482	1,550	957	1,315	879	810	1,660	850	856	2,172	1,316	2,273	2,273	-	2,402
Consultants	1,152	2,486	4,506	1,088	4,148	2,274	5,832	4,798	(1,034)	6,158	5,216	(942)	5,412	5,412	-	5,741
Lease Payments	4,726	3,122	5,516	3,166	1,702	2,648	1,803	1,796	(7)	1,904	1,894	(10)	1,957	1,957	-	2,074
Legal fees	-	-	-	-	-	110	-	-	-	-	-	-	-	-	-	-
Non life insurance	-	-	-	-	-	292	-	-	-	-	-	-	-	-	-	-
Printing and publication	-	-	-	-	-	286	-	-	-	-	-	-	-	-	-	-
Property payments	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Repairs and maintenance	172	307	358	6	746	839	578	886	308	611	1,089	478	1,135	1,135	-	1,201
Research and development	246,896	139,165	232,674	42,528	166,721	69,567	95,091	97,776	2,685	97,629	105,595	7,966	88,548	99,539	10,991	104,108
Training and staff development	450	294	1,200	239	516	250	546	1,114	568	577	1,175	598	1,227	1,227	-	1,299
Travel and subsistence	6,695	5,338	6,910	2,727	5,908	4,789	3,923	4,663	740	4,143	4,927	784	5,167	5,167	-	5,471
Venues and facilities		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other unclassified expenditure	4,008	10,056	11,497	6,862	4,729	-	9,459	2,520	(6,939)	9,987	(2,672)	(12,659)	1,059	108,128	10,991	115,052
Depreciation	3,748	3,694	5,607	1,345	2,389	-	2,523	2,520	(3)	2,664	2,659	(5)	2,805	2,805	-	2,974
Losses from	-	568	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sale of fixed assets	-	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Impairments and Adjustments to Fair Value	-	538	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Adjustments to Fair value of financial assets	-	538	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Transfers and subsidies</b>	<b>87,000</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Households and non-government units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discretionary Grant (SETAs only)	87,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other government units	87,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
National government	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Departmental agencies and accounts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Provinces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Municipalities	87,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Expenditure</b>	<b>403,550</b>	<b>212,361</b>	<b>324,652</b>	<b>110,432</b>	<b>237,121</b>	<b>144,095</b>	<b>172,463</b>	<b>174,031</b>	<b>1,568</b>	<b>179,336</b>	<b>179,005</b>	<b>(331)</b>	<b>181,170</b>	<b>181,170</b>	<b>0</b>	<b>192,670</b>



## 4.2 Relating expenditure trends to strategic outcome orientated goals

In the past years, there was a decline in the annual allocations received from NT due to baseline adjustments across the board, resulting from fiscal pressures currently faced by the Treasury. This in turn had an impact on the expenditure trends of the organisation as significant cuts need to be made to planned programme activities and the related expenditure.

### 4.2.1 Programme 1: Administration

Historically about 64% of the budgeted income of the organisation has been from donor-funded projects (refer Section 10 for detail of donor contributions), while the balance is funded from the MTEF. This funding from donors is ring-fenced for specific projects, while funding from Government has been utilised to cover administrative expenses linked to programme 1 and mainly employee-related costs for Programme 2 and Programme 3. However this trend is changing as less and less funding is being secured from third parties for projects.

#### Programme 1: Administration

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
	Audited Outcome	Audited Outcome	Preliminary outcome	Approved budget	Approved budget	Approved budget	Approved budget
Administration	52,100	80,713	50,417	40,653	45,304	50,606	53,915

Through several cost containment initiatives, the entity believes it has reached its proper base for administration expenses with operating expenses are expected to increase by only the inflationary rate year on year.

The entity will focus on maintaining the strength of its internal control environment to ensure effectiveness, efficiency and economy in its processes whilst managing costs within its base line.

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
	Audited Outcome	Audited Outcome	Preliminary outcome	Approved budget	Approved budget	Approved budget	Approved budget
Compensation of employees	30,487	49,637	30,351	19,074	20,410	21,319	22,812

Employee Compensation will decline slightly in 2019/20 due to the adjustments to incentive bonuses scheme in an attempt to reduce the salary bill of the institution with annual cost of living adjustments. There are still unfunded positions within the SANEDI structure which will not be filled due to funding limitations. These are not included in the budget but provision will only be made for these should additional funding be made available.

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
	Audited Outcome	Audited Outcome	Preliminary outcome	Approved budget	Approved budget	Approved budget	Approved budget
Goods and services	17,919	29,731	20,066	18,760	17,133	20,503	20,778

Expenditure on goods and services administration strategic objectives has historically increased by 6% year-on-year; it is expected to increase annually by 6% in future periods.



#### **4.2.2 Programme 2: Energy research, development and Innovation**

Programme 2 has historically been allocated approximately 70% of the overall funding and because of the volume of sub-programmes. The projected expenses for the medium term indicate the same trend. The funding for this programme has largely been received from other non-Government funding, through partners involved in the same activities as us and who share our vision of a sustainable future for all achieved through the use of RE technologies.

During the MTEF period, SANEDI will continue working together with its funders to source more funding for implementation of RE programmes. We are, however, aware of the change in direction by international donors who are redirecting their investments towards other, not-so developed countries, but we will continue through rigorous stakeholder engagements to demonstrate the value that can be derived beyond the borders of South Africa by continued partnership with SANEDI.

We are also aware of the fiscal challenges as faced by Government that have led to a decline in funding for research-related initiatives.

##### **Cleaner fossil fuels**

Cleaner Fossil Fuels is also funded from the DoE Vote allocation from National Treasury. Although no additional funds have been allocated for this sub-programme for the medium term period, SANEDI holds some funding from previous allocations towards the running of the sub-programme. We are in the process of finalising a financing agreement with the World Bank Carbon Capture and Storage Trust Fund for grant funding amounting to approximately \$23,000,000 for Phase 2 of the Carbon Capture and Storage Pilot project. Once the financing agreement is signed, this may give rise to additional funding requirements<sup>14</sup>. Expenditure estimates relating to these funds have been accounted for only in the year 2019/20. The project is going to be implemented in two stages. During Phase 1, the World Bank will procure and incur all the costs. In Phase 2, SANEDI will administer the procurement and manage those service providers' contracts.

Total budget expenditure is estimated to amount to R394 million over the medium term.

##### **Clean energy**

Through our partnership with the Department of Science and Technology (DST) we will also be receiving an allocation of R17 million during the MTEF period towards the implementation of the Solar Tech road map under the Clean Energy sub-programme. This project is expected to create a number of new of employment opportunities for specialised skills, thus also contributing to capacity building.

Through our partnership with the Danish Embassy, the DoE and Eskom, we will be continuing with the implementation of various RE interventions, including the WASA phase project. This project will contribute R30 million of the estimated expenditure for this sub programme over the medium term period.

Also through the Clean Energy sub-programme, we have enjoyed a long relationship with the GIZ and REEEP through our serving as the REEEP secretariat for the southern African region. We are from time to time engaged in a number of capacity building projects, which are confirmed on an annual basis, with these partners. Expenditure estimates linked to these projects have not been included in the above budget estimates at this time, pending finalisation and approval of funds.

##### **Smart grids**

R179.4 million has been allocated to the public entity from the EU (European Union) towards the Smart Grids Pilot Project, which will benefit nine pre-selected municipalities. Results from the pilot project will inform a preferred solution or approach that is intended to be used as the basis for an implementation case study at one of the

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<sup>14</sup> Co-funding is a condition of the grant which has been acknowledged by all signatories including National Treasury. Co-funding has been limited to funds previously allocated by Government towards this programme. The expectation is that further support for the programme can be leveraged through SACCCS membership fees.



municipalities. Results from the case study will inform a subsequent mass roll out, should adequate funding be available.

Expenditure increases in the 2019/20 financial year are linked to the case study that we intend to implement at one of the nine municipalities, with the intention of a mass roll out beyond 2020.

#### **Data Knowledge Management**

The sub-programme is at present focused on capacity building in the Energy Modelling and Data Management space. Funding for this programme is allocated from the DST. We are expecting to spend approximately R6 million over the medium term on this programme, inclusive of staff costs for the two to three modellers.

#### **Working for Energy**

Funding from the Working for Energy Programme has largely been through earmarked funds from Government. No additional funds have been allocated towards this sub-programme over the medium term. We are focusing our attention to sourcing funding and developing partnerships with the private sector for the continued implementation of this programme.

#### **Cleaner mobility**

Cleaner Mobility is largely unfunded. We have allocated funds from the MTEF allocation towards staff costs. At present we have two staff members under the programme that are funded by the United Nations Industrial Development Organisation (UNIDO). We are engaging with various stakeholders, including NT and the AfDB for funding.

### **4.2.3 Programme 3: Energy Efficiency**

Over the medium term, we will continue providing the required support to the SA Revenue Service (SARS) with the implementation of the section 12L tax incentives as prescribed within the legislation. We have, to the best of our ability, made an allocation to fund the activities for the implementation of the 12L incentives. However, the project remains grossly unfunded. Funding is required if we are to increase our efficiency in the processing of applications. Independent reviewers need to be compensated for work performed, and at present we are not adequately funded to compensate current reviewers, let alone increase the pool of reviewers. An estimated R20 million<sup>15</sup> is required for the implementation of the 12L project, as opposed to the current allocation of R2 million from the MTEF funds.

National Roadshows will be run through all nine provinces on an annual basis, including capacity building activities in the area of measurement and verification focusing on previously disadvantaged persons. An estimated R3 million will be spent towards these activities.

12I implementation activities will continue over the medium term with an annual report to Parliament.

Our EEDSM hub in partnership with the University of Pretoria and funding from the DST will continue over the period. An estimated R9 million is expected to be spent on this capacity building initiative over the next three years.

We have also received a grant from the French Development Agency, to house the SUNREF II Technical Assistance Facility (TAF) at SANEDI. The total expenditure over the MTEF is expected to amount to R18 million and will cover the full expense of the TAF.

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<sup>15</sup> A business case has been developed with a full breakdown of these costs and was submitted to National Treasury.





## Part B | Programme and sub-programme plans

## 5 Performance framework overview

### PERFORMANCE FRAMEWORK ON SUPPORT AND CORE BUSINESS

STRATEGIC OUTCOME ORIENTED GOALS	STRATEGIC OBJECTIVES	PROGRAMME PERFORMANCE INDICATORS
1. A resilient, efficient, effective and enabling delivering environment that is aligned to / complies with all statutory requirements	1.1 An effectual internal control environment	<ul style="list-style-type: none"> <li>An unqualified audit achieved by 2017/18 and maintained over the planning period</li> </ul>
	1.2 A highly motivated representative team that is adequately staffed and competent	<ul style="list-style-type: none"> <li>A less than 5% vacancy rate per annum maintained over the planning period</li> <li>80% of personnel trained as per the annual WSP over the planning period</li> <li>Less than 5% deviation from the SANEDI approved employment equity targets maintained over the planning period</li> </ul>
	1.3 Effective risk management on risk areas affecting SANEDI	<ul style="list-style-type: none"> <li>100% identified critical business risk factors managed as per risk management plan over the planning period</li> </ul>
	1.4 Effective stakeholder engagement	<ul style="list-style-type: none"> <li>75% implementation of CSEP achieved over the planning period</li> </ul>
	1.5 Effectual ICT management	<ul style="list-style-type: none"> <li>80% implementation of corporate ICT plan over the planning period</li> </ul>
2. Energy innovation, knowledge and skills for a less carbon intensive, more environmentally sustainable, affordable and efficient energy system	2.1 Energy-related support, information and advice to inform high confidence energy planning, decision-making and policy development (including knowledge custodianship)	<ul style="list-style-type: none"> <li>Number of energy solutions assessed (advisory notes, feasibility reports, complete study reports, case studies, technology roadmaps and operational demonstration facilities)</li> </ul>
		<ul style="list-style-type: none"> <li>Number of annual energy industry status reports (insights, trends, international and national collaboration decisions, interfacing and forums)</li> </ul>
		<ul style="list-style-type: none"> <li>Minimum number of energy-related datasets maintained per annum</li> <li>Number of research reports provided</li> </ul>
	2.2 Accelerated clean energy transformation for a sustainable economy	<ul style="list-style-type: none"> <li>Number of policy support instruments (industry roadmaps, sector development plans and industry support tools, etc.)</li> </ul>
		<ul style="list-style-type: none"> <li>Number of energy-related knowledge sharing events / platforms engaged in (own hosted, attended, knowledge presented, supported)</li> </ul>
		<ul style="list-style-type: none"> <li>Number of commercially viable cleantech solutions progressed to active business incubation and/or deployment</li> </ul>
		<ul style="list-style-type: none"> <li>Number of recipients of energy-related training facilitated</li> <li>Number of energy-related research students / contracted researchers supported (e.g. bursaries, non-bursaries, contract opportunities, infrastructure support, etc.)</li> </ul>

STRATEGIC OUTCOME ORIENTED GOALS	STRATEGIC OBJECTIVES	PROGRAMME PERFORMANCE INDICATORS
2. Energy innovation, knowledge and skills for a less carbon intensive, more environmentally sustainable, affordable and efficient energy system	3.1 Accelerated adoption of Energy Efficiency solutions to optimise the Use of finite resources	<ul style="list-style-type: none"> <li>• Number of EE solutions assessed (advisory notes, feasibility reports, complete study reports, case studies, technology roadmaps and operational demonstration facilities)</li> </ul>
		<ul style="list-style-type: none"> <li>• Number of EE solutions implemented (12I, 12L, AfD support projects, cool roofs)</li> </ul>
		<ul style="list-style-type: none"> <li>• Number of annual EE industry status report (insights, trends, international and national collaboration decisions, interfacing and forums)</li> </ul>
		<ul style="list-style-type: none"> <li>• Number of EE energy-related datasets maintained per annum</li> </ul>
		<ul style="list-style-type: none"> <li>• Number of EE research reports provided</li> </ul>
		<ul style="list-style-type: none"> <li>• Number of energy-related knowledge sharing events / platforms engaged in (own hosted, attended, knowledge presented, supported)</li> </ul>
		<ul style="list-style-type: none"> <li>• Number of recipients of energy-related training facilitated</li> </ul>
		<ul style="list-style-type: none"> <li>• Number of energy-related research students / contracted researchers supported (e.g. bursaries, non-bursaries, contract opportunities, infrastructure support, etc.)</li> </ul>

Colour Legend: Yellow - Support business  
 Orange - Core business



## 6 Programme 1: Administration

The purpose of Programme 1 is to create a resilient, efficient, effective and enabling delivery environment for SANEDI that is fully compliant with all statutory requirements. The administration programme incorporates the following functions:

- Human Resources Management (ensuring available, competent and happy staff)
- Information and Communication Technology (ICT)
- Corporate Services (incorporating all lines of business and support activities relating to the Board and Board Committees, business processes and reporting)
- Financial Management (including all lines of business and support activities relating to the effectual financial management and auditing practices)
- Supply Chain Management (including all lines of business and support activities relating to the effectual supply chain management)
- Corporate Communications (including all lines of business and support activities relating to effectual communication including stakeholder engagement, client satisfaction surveys, public awareness campaigns in collaboration with the DoE and media intelligence)
- Shared Logistics (including shared facilities and shared resources by all managers)



## 6.1 Programme 1: Strategic objective and medium term targets for 2019/20 – 2021/22

The strategic objectives for the administration programme were defined as:

Strategic Objective		5 year strategic plan target	Actual audited performance			Estimated performance 2018/19	Medium term targets		
			2015/16	2016/17	2017/18		2019/20	2020/21	2021/2022
1.1	A An effective and efficient internal control environment.	Achieve an unqualified audit by 2021/20 and maintain over the planning period	Unqualified	Unqualified	Unqualified	Unqualified	Unqualified audit	Unqualified audit	Unqualified audit
1.2	A team that is adequately staffed, adequately skilled and trained and adequately representative of the national demographics	Maximum 5% vacancy rate per annum.	-	-	Not achieved	5	5	5	5
1.3	A team that is adequately staffed, adequately skilled and trained and adequately representative of the national demographics	80% personnel trained as per the annual WSP	-	-	Achieved	80	80	80	80
1.4	A team that is adequately staffed, adequately skilled and trained and adequately representative of the national demographics	<5% deviation from the SANEDI approved employment equity targets	-	-	Achieved	<5	<5	<5	<5
1.5	Effective risk management on risk areas affecting SANEDI.	100% identified critical business risk factors managed as per risk management plan	Achieved	Achieved	Achieved	100	100	100	100
1.6	Effective and comprehensive stakeholder management.	75% implementation of (CSEP)	-	-	Achieved	75	75	75	75
1.7	An effective and efficient internal control environment.	80% implementation of corporate ICT plan	-	-	New Indicator	80	80	80	80



## 6.2 Programme 1: Performance indicators and annual targets for 2019/18 – 2021/22

The administration programme encompasses the functions of HR, Finance, ICT, Procurement, Logistics, Corporate Services and Communications. The following targets were defined for the MTEF period:

Performance Indicator		5 year strategic plan target	Actual audited performance			Estimated performance 2018/19	Medium term targets		
			2015/16	2016/17	2017/18		2019/20	2020/21	2021/2022
1.1	Unqualified audits	Achieve an unqualified audit by 2017/18 and maintain over the planning period	Unqualified	Unqualified	Unqualified	Unqualified	Unqualified audit	Unqualified audit	Unqualified audit
1.2	Vacancy rate of funded positions	Maximum 5% vacancy rate per annum.	-	-	Not achieved	5	5	5	5
1.3	Percentage of personnel trained as per Workplace Skills Plan (WSP)	80% personnel trained as per the annual WSP	-	-	Achieved	80	80	80	80
1.4	Percentage deviation from employment equity targets	<5% deviation from the SANEDI approved employment equity targets	-	-	Achieved	<5	<5	<5	<5
1.5	Percentage critical business risk factors identified, managed as per risk management plan	100% identified critical business risk factors managed as per risk management plan	Achieved	Achieved	Achieved	100	100	100	100
1.6	Percentage implementation of Corporate Stakeholder Engagement Plan (CSEP)	75% implementation of (CSEP)	-	-	Achieved	75	75	75	75
1.7	Percentage implementation of corporate ICT	80% implementation of corporate ICT plan	-	-	New Indicator	80	80	80	80



### 6.3 Programme 1: Quarterly targets for 2019/20

The administration programme encompasses the functions of HR, Finance, ICT, Procurement, Logistics, Corporate Services and Communications. The following targets were defined for the 2019/20 year:

Programme Performance Indicator		Reporting period	Annual Target 2019/20	Quarterly targets			
				1st	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>
1.1	Unqualified audits	Annually	Unqualified audit	-	Unqualified audit	-	-
1.2	Vacancy rate of funded positions	Annually	Maintain 5% vacancy rate of funded positions	-	-	-	Max 5% vacancy rate of funded positions
1.3	Percentage of personnel trained as per Workplace Skills Plan (WSP)	Annually	80% of personnel trained as per the WSP	-	-	-	80% of personnel trained as per WSP
1.4	Percentage deviation from employment equity targets	Annually	<5% deviation from employment equity target	-	-	-	Less than 5% deviation from targets
1.5	Percentage critical business risk factors identified, managed as per risk management plan	Quarterly	100% critical business risk factors identified, managed as per risk management plan	100% critical business risk factors identified, managed as per risk management plan	100% critical business risk factors identified, managed as per risk management plan	100% critical business risk factors identified, managed as per risk management plan	100% critical business risk factors identified, managed as per risk management plan
1.6	Percentage implementation of Corporate Stakeholder Engagement Plan (CSEP)	Quarterly	75% of CSEP implemented	45% implementation of plan for the year	55% implementation of plan for the year	65% implementation of plan for the year	75% implementation of plan for the year
1.7	Percentage implementation of corporate ICT	Annually	80% Implementation of the corporate ICT	-	-	-	80% implementation of corporate ICT



## 6.4 Reconciling performance targets with the Budget and MTEF

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
	Audited Outcome	Audited Outcome	Preliminary outcome	Approved budget	Approved budget	Approved budget	Approved budget
Programme 1: Administration	52,100	80,713	50,417	40,653	45,304	50,606	53,915





	2015/16	2016/17	2017/18	2018/19			2019/20			2020/21			2021/22
	Audited Outcome	Audited Outcome	Audited Outcome	Budget estimate	Approved budget	Changes from approved budget	Budget estimate	Revised budget estimate	Changes from budget estimate	Budget estimate	Revised budget estimate	Changes from budget estimate	Planning Budget Estimate
Rand thousand													
<b><u>Economic classification</u></b>													
<b>Current payments</b>	52,100	80,713	50,417	42,328	40,354	(1,974)	44,698	40,202	(4,496)	50,606	44,628	(5,978)	46,564
Compensation of employees	30,487	49,637	30,351	19,137	19,074	(63)	20,209	20,410	201	27,298	21,319	(5,978)	22,812
Salaries and wages	30,487	49,637	30,351	19,137	19,074	(63)	20,209	20,410	201	27,298	21,319	(5,978)	22,812
Goods and services	17,919	29,731	20,066	20,668	18,760	(1,908)	21,825	17,133	(4,692)	20,503	20,503	-	20,778
Of which <sup>1</sup>													
Administrative fees			8,833			-			-				-
Advertising Agency and support/outsourced services	1,033	1,462	-	1,801	2,058	257	1,902	2,171	269	2,243	2,243	-	2,377
Audit costs			1,564			-			-				-
Bank charges			39			-			-				-
Board costs			906			-			-				-
Bursaries (employees)			(83)			-			-				-
Catering: internal activities			94			-			-				-
Communication	577	416	-	750	747	(3)	792	788	(4)	814	814	-	863
Computer services	480	949	822	810	807	(3)	856	851	(5)	879	879	-	932
Consultants	2,187	488	1,277	3,902	3,888	(14)	4,120	4,102	(18)	4,237	4,237	-	4,492
Lease Payments	3,121	3,166	2,648	1,803	1,796	(7)	1,904	1,894	(10)	1,957	1,957	-	2,074
Legal fees			110			-			-				-
Non-life insurance			292			-			-				-
Printing and publication	-		271			-			-				-
Repairs and maintenance			-			-			-				-
Research and development	246	-	839	578	576	(2)	611	608	(3)	628	628	-	666



Training and staff development	3,609	22,106	905	-	4,520	4,520	-	4,769	4,769	4,926	4,926	-	4,267
Travel and subsistence	280	-	205	546	544	(2)	577	574	(3)	593	593	-	629
Other unclassified expenditure	4,793	-	-	9,169	2,520	(6,649)	9,681	-	(9,681)	2,805	2,805	-	2,973
Depreciation	3,694	1,345		2,523	2,520	(3)	2,664	2,659	(5)	2,805	2,805	-	2,974
<b>Total Expenditure</b>	<b>52,100</b>	<b>80,713</b>	<b>50,417</b>	<b>42,328</b>	<b>40,354</b>	<b>(1,974)</b>	<b>44,698</b>	<b>40,202</b>	<b>(4,496)</b>	<b>50,606</b>	<b>44,628</b>	<b>(5,978)</b>	<b>46,564</b>



## 7 Programme 2: Applied energy research, development and innovation

The purpose of the applied energy research and development programme is two-fold:

1. Knowledge creation that can support energy-related planning and decision-making. As such, the programme is concerned with developing a portfolio of assessed and demonstrated energy solutions as well as data assets that can support high confidence energy planning, decision-making and policy development.
2. Accelerating the transformation of the energy market and landscape in the country. This entails building capacity (skills and competencies) and implementing market and/or industry development initiatives that will contribute to the green economy.

The Programme consists of five active sub-programmes:

Sub-programme	Purpose
Cleaner fossil fuels	Alternative low carbon energy and mitigation options to limit serious, negative environmental impacts from conventional energy sources.
Renewable Energy	Support the accelerated and informed development of South Africa's clean energy portfolio and RE sector.
Smart grids	Demonstrate and assess intelligent energy system infrastructure as an enabler for municipal sustainability.
Data and knowledge management	Collation, development and utilisation of credible, objective and high quality data and information relating to the areas of SANEDI's responsibility.
Cleaner mobility	Developing Cleaner Mobility Solutions for Urban Transportation.
Working for Energy	Demonstrating innovative, sustainable energy solutions for rural and low income urban areas.

A summary view for the overall programme 2 is provided first, with contributing sub-programmes detailed below.



### 7.1 Programme 2: Strategic objective and medium term targets for 2019/20-2021/22

Strategic Objective		5-year strategic plan target	Actual audited performance			Estimated performance 2018/19	Medium term Targets		
			2015/16	2016/17	2017/18		2019/2020	2020/2021	2021/22
2.1	Energy-related support, information and advice to inform high confidence energy planning, decision-making and policy development (including knowledge custodianship)	A knowledge portfolio contribution that consists of at least							
		107 Assessed energy solutions,	15	21	23	17	26	26	20
		30 Annual energy industry status reports,	-	-	10	10	10	10	10
		30 Energy datasets maintained and	5	4	7	7	7	7	6
		31 Research reports provided.	2	8	8	5	8	8	5
2.2	Accelerated clean energy transformation for a sustainable economy	At least 40 additional energy-related market and/or industry development initiatives <sup>16</sup> contributed towards the green economy by 2020	15	15	15	13	14	14	10
		A growing pool of energy-related skills and capacity in the energy sector with the addition of at least 1,500 newly trained individuals and active researchers supported in the field by 2020	232	232	400	320	261	261	200

<sup>16</sup> Initiatives including industry roadmaps, development plans and tools; knowledge sharing events or platforms; and new clean tech business initiatives



## 7.2 Programme 2: Performance indicators and annual targets for 2019/20-2021/22

The contribution at programme level has been **collated across all sub-programmes**. A breakdown of the respective contribution from each sub-programme is provided in subsequent paragraphs.

Programme Performance Indicator		5 year strategic plan target	Actual audited performance			Estimated performance 2018/19	Medium term Targets		
			2015/16	2016/17	2017/18		2019/2020	2020/21	2021/22
<b>Strategic objective 2.1:</b> Energy-related support, information and advice to inform high confidence energy planning, decision-making and policy development									
2.1.1	Number of energy solutions assessed (advisory notes, feasibility reports, complete study reports, case studies, technology roadmaps and operational demonstration facilities)	107 energy solutions assessed	15	21	23	17	26	26	26
2.1.2	Number of annual energy industry status reports (insights, trends, international and national collaboration decisions, interfacing and forums)	30 annual energy industry status reports	-	-	10	10	10	10	10
2.1.3	Minimum number of energy-related datasets maintained per annum	7 energy-related datasets maintained	5	4	7	7	7	7	7
2.1.4	Number of research reports provided	31 research reports provided	2	8	8	5	8	8	8
<b>Strategic objective 2.2:</b> Accelerated transformation to a less energy and carbon intensive economy									
2.2.1	Number of policy support instruments (Industry roadmaps, sector development plans and industry support tools, etc.)	25 policy support instruments produced	3	3	8	7	3	3	3
2.2.2	Number of energy-related knowledge sharing events / platforms engaged in (own hosted, attended, knowledge presented, supported)	66 energy-related knowledge sharing events / platforms engaged in	7	15	15	13	14	14	14



Programme Performance Indicator		5 year strategic plan target	Actual audited performance			Estimated performance 2018/19	Medium term Targets		
			2015/16	2016/17	2017/18		2019/2020	2020/21	2021/22
2.2.3	Number of commercially viable cleantech solutions progressed to active business incubation and/or deployment	7 commercially viable cleantech solutions progressed to active business incubation and/or deployment	1	-	2	1	2	2	2
2.2.4	Number of recipients of energy-related training facilitated	1 804 recipients of energy-related training facilitated	509	232	400	320	261	261	261
2.2.5	Number of energy-related research students / contracted researchers supported (e.g. bursaries, non-bursaries, contract opportunities, infrastructure support, etc.)	65 energy-related research students / contracted researchers supported	6	19	13	13	13	13	13



## 7.2.1 Sub-programme performance indicators and annual targets for 2019/20-2021/22

This section presents the breakdown of the respective contributions from each sub-programme towards the total programme delivery. The combined contribution summate to the total contribution reflected for Programme 2 above and **should not be double counted**.

### 7.2.1.1 Cleaner Fossil Fuels (CFF)

Programme Performance Indicator	5 year strategic plan target	Actual audited performance			Estimated performance 2018/19	Medium term targets			
		2015/16	2016/17	2017/18		2019/20	2020/21	2021/22	
<b>Strategic objective 2.1:</b> Energy-related support, information and advice to inform high confidence energy planning, decision-making and policy development									
2.1.1	Number of energy solutions assessed (advisory notes, feasibility reports, complete study reports, case studies, technology roadmaps and operational demonstration facilities)	Assess or demonstrate 19 energy solutions by 2020	11	1	3	3	1	1	1
2.1.2	Number of annual energy industry status reports (CFF component relating to insights, trends, international and national collaboration decisions, interfacing and forums)	Produce 3 CFF sector insight and trend contributions to SANEDI's annual industry insight and trend publication by 2020	-	-	1	1	1	1	1
2.1.3	Minimum number of energy-related datasets maintained per annum	Maintain 1 expanded and updated geological database each year until 2020	-	1	1	1	1	1	1
2.1.4	Number of research reports provided	Complete one Round 1 and one Round 2 static and dynamic (simulation) modelling of geological data by 2020	1	-	-	1	-	-	-
<b>Strategic objective 2.2:</b> Accelerated transformation to a less energy and carbon intensive economy									
2.2.2	Number of energy-related knowledge sharing events / platforms engaged in (own	2 CCS industry knowledge sharing events hosted to promote CCS-related market	1	-	1	-	1		1



Programme Performance Indicator		5 year strategic plan target	Actual audited performance			Estimated performance 2018/19	Medium term targets		
			2015/16	2016/17	2017/18		2019/20	2020/21	2021/22
	hosted, attended, knowledge presented, supported)	and industry development by 2020							
2.2.4	Number of recipients of energy-related training facilitated	At least 1,000 recipients of training facilitated by SANEDI between 2015/16 and 2019/20	1	-	1218	-	200	200	150
2.2.5	Number of energy-related research students / contracted researchers supported (e.g. bursaries, non-bursaries, contract opportunities, infrastructure support, etc.)	18 researchers active as a result of bursaries and non-bursary support for research in the field of CFF between 2015/16 and 2019/20	502	100	150	150	150	150	2

### 7.2.1.2 Renewable Energy (RE)

Programme Performance Indicator		5 year strategic plan target	Actual audited performance			Estimated performance 2018/19	Medium term targets		
			2015/16	2016/17	2017/18		2019/20	2020/21	2021/22
<b>Strategic objective 2.1:</b> Energy-related support, information and advice to inform high confidence energy planning, decision-making and policy development									
2.1.1	Number of energy solutions assessed (advisory notes, feasibility reports, complete study reports, case studies, technology roadmaps and operational demonstration facilities)	Assess <b>30</b> energy solutions by 2020	1	6	8	3	10	10	10
2.1.2	Number of annual energy industry status reports (insights, trends, international and national collaboration decisions, interfacing and forums)	Produce <b>3</b> RE sector insight and trend contributions to SANEDI's annual industry insight and trend publication by 2020	-	-	1	1	1	1	1





Programme Performance Indicator		5 year strategic plan target	Actual audited performance			Estimated performance 2018/19	Medium term targets		
			2015/16	2016/17	2017/18		2019/20	2020/21	2021/22
2.1.3	Minimum number of energy-related datasets maintained per annum	Maintain (update and expand) at least 2 <sup>17</sup> RE-related datasets over the planning period	2	2	3	3	3	2	2
2.1.4	Number of research reports provided	Analyse available data and produce 6 reports by 2020	-	-	3	-	3	3	3
<b>Strategic objective 2.2: Accelerated transformation to a less energy and carbon intensive economy</b>									
2.2.1	Number of policy support instruments (Industry roadmaps, sector development plans and industry support tools, etc.)	Develop 11 industry roadmaps, sector development plans and industry support tools by 2020	1	1	4	4	-	-	-
2.2.2	Number of energy-related knowledge sharing events / platforms engaged in (own hosted, attended, knowledge presented, supported)	Host at least 8 industry knowledge sharing or industry development events by 2020	-	-	3	2	3	2	2
2.2.3	Number of commercially viable cleantech solutions progressed to active business incubation and/or deployment	Progress 5 viable cleantech concepts to the market by 2020	1	-	1	1	1	1	1
2.2.4	Number of recipients of energy-related training facilitated	At least 350 recipients of training facilitated by SANEDI by 2020	-	85	186	86	26	26	26
2.2.5	Number of active researchers contributing to energy research leadership enabled by a SANEDI programme	6 bursaries offered for research in the field of RE by 2020	1	1	1	1	1	1	1

<sup>17</sup> The number of datasets to be maintained each year will vary depending on SANEDI's scope of commitments and frequency at which data will require updating



### 7.2.1.3 Smart Grids

Programme Performance Indicator	5 year strategic plan target	Actual audited performance			Estimated performance 2018/19	Medium term targets			
		2015/16	2016/17	2017/18		2019/20	2020/21	2021/22	
<b>Strategic objective 2.1:</b> Energy-related support, information and advice to inform high confidence energy planning, decision-making and policy development									
2.1.1	Number of energy solutions assessed (advisory notes, feasibility reports, complete study reports, case studies, technology roadmaps and operational demonstration facilities)	Assess <b>31</b> energy solutions by 2020	10	5	7	12	12	10	10
2.1.2	Number of annual energy industry status reports (insights, trends, international and national collaboration decisions, interfacing and forums)	Produce sector insight and trend contributions to SANEDI's annual industry insight and trend publication by 2020	-	1	1	1	1	1	1
<b>Strategic objective 2.2:</b> Accelerated transformation to a less energy and carbon intensive economy									
2.2.1	Number of industry roadmaps, sector development plans and industry support tools developed to promote energy-related market/industry development	Develop 1 industry /sector development plan and 1 smart metering laboratory as an industry development tool by 2020	-	1	2	1	1	1	1
2.2.2	Number of industry knowledge sharing events and platforms hosted to promote energy-related market and industry development	Host 22 Smart Grid industry knowledge sharing events by 2020	3	4	-	5	4	4	4
2.2.4	Number of recipients of energy-related training facilitated by SANEDI	180 recipients of training offered or facilitated by SANEDI over the planning period to 2020	-	20	45	60	60	60	60
2.2.5	Number of active researchers contributing to energy	23 bursaries for full time research/study related to smart grids	-	11	21	4	4	4	4



Programme Performance Indicator	5 year strategic plan target	Actual audited performance			Estimated performance 2018/19	Medium term targets		
		2015/16	2016/17	2017/18		2019/20	2020/21	2021/22
research leadership enabled by a SANEDI programme								

### 7.2.1.4 Data and knowledge management (CESAR)

Programme Performance Indicator	5 year strategic plan target	Actual audited performance			Estimated performance 2018/19	Medium term targets			
		2015/16	2016/17	2017/18		2019/20	2020/21	2021/22	
<b>Strategic objective 2.1:</b> Energy-related support, information and advice to inform high confidence energy planning, decision-making and policy development									
2.1.3	Minimum number of energy-related datasets maintained per annum	Maintain <b>3</b> functional, accurate, integrated and user friendly open energy data repositories annually	-	-	1	3	3	3	1
2.1.4	Number of research reports provided	Analyse available data and produce <b>17</b> publications or energy models in response to a policy question by 2020	-	-	3	3	3	3	3
<b>Strategic objective 2.2:</b> Accelerated transformation to a less energy and carbon intensive economy									
2.2.1	Number of industry roadmaps, sector development plans and industry support tools developed to promote energy-related market/industry development	Develop 4 industry decision support tools	-	-	1	1 Support Tool: Hydrogen Fuel Cells	1 Industry decision support tool i.e.: Hydrogen Fuel Cell deployment tool or Mapbook/interactive web map developed	1 Industry decision support tool	1 Industry decision support tool
2.2.2	Number of industry knowledge sharing events and platforms hosted to promote energy-related	Host 4 industry knowledge sharing events by 2020	-	-	-	1	1	1	1



Programme Performance Indicator		5 year strategic plan target	Actual audited performance			Estimated performance 2018/19	Medium term targets		
			2015/16	2016/17	2017/18		2019/20	2020/21	2021/22
	market and industry development								
2.2.4	Number of recipients of energy-related training facilitated by SANEDI	Host 6 masters or doctorate students for on-the-job training (DST funded internships)	-	-	-	New indicator	2	2	2

### 7.2.1.5 Cleaner Mobility

Programme Performance Indicator		5 year strategic plan target	Actual audited performance			Estimated performance 2018/19	Medium term targets		
			2015/16	2016/17	2017/18		2019/20	2020/21	2021/22
<b>Strategic objective 2.1:</b> Energy-related support, information and advice to inform high confidence energy planning, decision-making and policy development									
2.1.1	Number of energy solutions assessed (advisory notes, feasibility reports, complete study reports, case studies, technology roadmaps and operational demonstration facilities)	Assess <b>12</b> cleaner mobility solutions by 2020	-	1	-	5	1	5	5
2.1.2	Number of annual energy industry status reports (insights, trends, international and national collaboration decisions, interfacing and forums)	Produce <b>3</b> CM sector insight and trend contributions to SANEDI's annual industry insight and trend publication by 2020	-	-	1	1	1	1	1
2.1.4	Number of research reports provided	Analyse available data and produce 2 reports related to cleaner mobility by 2020.	-	-	-	-	1	1	1



Programme Performance Indicator		5 year strategic plan target	Actual audited performance			Estimated performance 2018/19	Medium term targets		
			2015/16	2016/17	2017/18		2019/20	2020/21	2021/22
<b>Strategic objective 2.2:</b> Accelerated transformation to a less energy and carbon intensive economy									
2.2.2	Number of energy-related knowledge sharing events / platforms engaged in (own hosted, attended, knowledge presented, supported)	Engage in at least 4 industry knowledge sharing events by 2020	-	1	1	1	1	1	1
2.2.4	Number of recipients of energy-related training facilitated	<b>19</b> recipients of training facilitated by SANEDI by 2020	-	-	17	6	7	10	10



**7.2.1.6 Working for Energy**

Programme Performance Indicator		5-year strategic plan target	Actual audited performance			Estimated performance 2018/19	Medium term targets		
			2015/16	2016/17	2017/18		2019/20	2020/21	2021/22
<b>Strategic objective 2.1:</b> Energy-related support, information and advice to inform high confidence energy planning, decision-making and policy development (including knowledge custodianship)									
2.1.1	Number of energy solutions assessed (advisory notes, feasibility reports, complete study reports, case studies, technology roadmaps and operational demonstration facilities)	Assess 14 working for energy solutions by 2020	3	3	3	2	2	2	2
2.1.2	Number of annual energy industry status reports (insights, trends, international and national collaboration decisions, interfacing and forums)	Produce 3 working for energy sector insight and trend contributions to SANEDI’s annual industry insight and trend publication by 2020	-	-	-	1	1	1	1
2.1.4	Number of research reports provided	Product 4 research reports relating to working for energy by 2020.	-	-	1	1	1	1	1
<b>Strategic objective 2.2:</b> Accelerated clean energy transformation for a sustainable economy									
2.2.1	Number of policy support instruments (Industry roadmaps, sector development plans and industry support tools, etc.)	Assess 3 working for energy solutions by 2020	-	-	-	1	1	1	1
2.2.2	Number of energy-related knowledge sharing events / platforms engaged in (own hosted, attended, knowledge presented, supported)	Engage in at least 26 industry knowledge sharing events by 2020	2	3	9	4	4	4	4
2.2.3	Number of commercially viable cleantech solutions progressed to active business incubation and/or deployment	At least 1 viable EV-related cleantech concept, technologies or solutions advanced to the market by 2020	-	-	-	-	-	1	1
2.2.4	Number of recipients of energy-related training facilitated	161 recipients of training facilitated by SANEDI by 2020	82	7	27	15	15	15	15
2.2.5	Number of energy-related research students / contracted researchers supported (e.g. bursaries, non-bursaries, contract opportunities, infrastructure support, etc.)	18 of energy-related student support initiatives provided	-	-	-	6	6	6	6



### 7.3 Programme 2: Quarterly targets for 2019/20

The contribution at Programme level has been collated across all sub-programmes. A breakdown of the respective contribution from each sub-programme is provided in subsequent paragraphs.

Programme Performance Indicator		Reporting period	Annual Target 2019/20	Quarterly targets			
				1st	2nd	3rd	4th
2.1.1	Number of energy solutions assessed (advisory notes, feasibility reports, complete study reports, case studies, technology roadmaps and operational demonstration facilities)	Quarterly	28	1	8	9	10
2.1.2	Number of annual energy industry status reports (insights, trends, international and national collaboration decisions, interfacing and forums)	Annual	6	-	-		6
2.1.3	Minimum number of energy-related datasets maintained per annum	Quarterly	7	2	2	-	3
2.1.4	Number of research reports provided	Quarterly	8	-	1	1	6
2.2.1	Number of policy support instruments (Industry roadmaps, sector development plans and industry support tools, etc.)	Quarterly	3	-	-	1	2
2.2.2	Number of energy-related knowledge sharing events / platforms engaged in (own hosted, attended, knowledge presented, supported)	Quarterly	14	2	4	4	3
2.2.3	Number of commercially viable cleantech solutions progressed to active business incubation and/or deployment	Annual	1	-	-	-	1
2.2.4	Number of recipients of energy-related training facilitated	Quarterly	320	44	75	113	88
2.2.5	Number of energy-related research students / contracted researchers supported (e.g. bursaries, non-bursaries, contract opportunities, infrastructure support, etc.)	Annual	7	-	4	-	3

#### 7.3.1 Sub-programme quarterly targets for 2019/20-2020/21

This section presents the breakdown of the respective contributions from each sub-programme towards the total programme delivery. The combined contribution summate to the total contribution reflected for Programme 2 above and **should not be double counted**.



**7.3.1.1 Cleaner Fossil Fuels**

Programme Performance Indicator		Reporting period	Annual Target 2019/20	Quarterly targets			
				1st	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>
2.1.1	Number of energy solutions assessed (advisory notes, feasibility reports, complete study reports, case studies, technology roadmaps and operational demonstration facilities)	Quarterly	3	-	-	1	2
2.1.2	Number of annual energy industry status reports (insights, trends, international and national collaboration decisions, interfacing and forums)	Annual	1	-	-	-	1
2.1.3	Minimum number of energy-related datasets maintained per annum	Quarterly	1	-	-	-	1
2.1.4	Number of research reports provided	Quarterly	1	-	-	-	1
2.2.2	Number of energy-related knowledge sharing events / platforms engaged in (own hosted, attended, knowledge presented, supported)	Quarterly	14	3	4	3	4
2.2.4	Number of recipients of energy-related training facilitated	Quarterly	150	-	50	50	50
2.2.5	Number of energy-related research students / contracted researchers supported (e.g. bursaries, non-bursaries, contract opportunities, infrastructure support, etc.)	Annual	2	-	-	-	2





### 7.3.1.2 Renewable Energy

Programme Performance Indicator		Reporting period	Annual Target 2019/20	Quarterly targets			
				1st	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>
2.1.1	Number of energy solutions assessed (advisory notes, feasibility reports, complete study reports, case studies, technology roadmaps and operational demonstration facilities)	Quarterly	10	1	3	3	3
2.1.2	Number of annual energy industry status reports (insights, trends, international and national collaboration decisions, interfacing and forums)	Annual	1	-	-	-	1
2.1.3	Minimum number of energy-related datasets maintained per annum	Quarterly	3	1	1	-	1
2.1.4	Number of research reports provided	Quarterly	3	-	1	1	1
2.2.2	Number of energy-related knowledge sharing events / platforms engaged in (own hosted, attended, knowledge presented, supported)	Quarterly	3	1	-	1	1
2.2.3	Number of commercially viable cleantech solutions progressed to active business incubation and/or deployment	Annual	1	-	-	-	1
2.2.4	Number of recipients of energy-related training facilitated	Quarterly	26	44	-	32	10
2.2.5	Number of energy-related research students / contracted researchers supported (e.g. bursaries, non-bursaries, contract opportunities, infrastructure support, etc.)	Quarterly	1	-	-	-	1



### 7.3.1.3 Smart Grids

Programme Performance Indicator		Reporting period	Annual Target 2019/20	Quarterly targets			
				1st	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>
2.1.1	Number of energy solutions assessed (advisory notes, feasibility reports, complete study reports, case studies, technology roadmaps and operational demonstration facilities)	Quarterly	12	3	3	3	3
2.1.2	Number of annual energy industry status reports (insights, trends, international and national collaboration decisions, interfacing and forums)	Annual	1	-	-	-	1
2.2.1	Number of policy support instruments (Industry roadmaps, sector development plans and industry support tools, etc.)	Quarterly	1	-	-	1	-
2.2.2	Number of energy-related knowledge sharing events / platforms engaged in (own hosted, attended, knowledge presented, supported)	Quarterly	4	1	1	1	1
2.2.4	Number of recipients of energy-related training facilitated	Quarterly	60	-	20	20	20
2.2.5	Number of energy-related research students / contracted researchers supported (e.g. bursaries, non-bursaries, contract opportunities, infrastructure support, etc.)	Quarterly	4	-	4	-	-

### 7.3.1.4 Data and knowledge management (CESAR)

Programme Performance Indicator		Reporting period	Annual Target 2019/20	Quarterly targets			
				1st	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>
2.1.3	Minimum number of energy-related datasets maintained per annum	Quarterly	3	1	1	-	1
2.1.4	Number of research reports provided	Annual	3	-	-	-	3
2.2.1	Number of policy support instruments (Industry roadmaps, sector development plans and industry support tools, etc.)	Quarterly	1	-	-	-	1
2.2.2	Number of energy-related knowledge sharing events / platforms engaged in (own hosted, attended, knowledge presented, supported)	Quarterly	1	-	-	1	-
2.2.4	Number of recipients of energy-related training facilitated	Annual	3	-	-	-	3



**7.3.1.5 Cleaner mobility**

Programme Performance Indicator		Reporting period	Annual Target 2019/20	Quarterly targets			
				1st	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>
2.1.1	Number of energy solutions assessed (advisory notes, feasibility reports, complete study reports, case studies, technology roadmaps and operational demonstration facilities)	Quarterly	5	1	2	1	1
2.1.2	Number of annual energy industry status reports (insights, trends, international and national collaboration decisions, interfacing and forums)	Annual	1	-	-	1	-
2.2.2	Number of energy-related knowledge sharing events / platforms engaged in (own hosted, attended, knowledge presented, supported)	Quarterly	1	-	-	-	1
2.2.3	Number of commercially viable cleantech solutions progressed to active business incubation and/or deployment	Annual	-	-	-	-	-
2.2.4	Number of recipients of energy-related training facilitated	Quarterly	6	-	-	6	-



### 7.3.1.5.1 Working for energy

Programme Performance Indicator		Reporting period	Annual Target 2019/20	Quarterly targets			
				1st	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>
2.1.1	Number of energy solutions assessed (advisory notes, feasibility reports, complete study reports, case studies, technology roadmaps and operational demonstration facilities)	Quarterly	2			1	1
2.1.2	Number of annual energy industry status reports (insights, trends, international and national collaboration decisions, interfacing and forums)	Annual	1	-	-	-	1
2.1.4	Number of research reports provided	Quarterly	1	-	-	-	1
2.2.1	Number of policy support instruments (industry roadmaps, sector development plans and industry support tools, etc.)	Quarterly	1	-	-	-	1
2.2.2	Number of energy-related knowledge sharing events / platforms engaged in (own hosted, attended, knowledge presented, supported)	Quarterly	4	1	1	1	1
2.2.3	Number of recipients of energy-related training facilitated	Quarterly	15	-	5	5	5
2.2.4	Number of energy-related research students / contracted researchers supported (e.g. bursaries, non-bursaries, contract opportunities, infrastructure support, etc.)	Quarterly	6	-	-	-	6



## 7.4 Reconciling performance targets with the Budget and MTEF

Programme 2: Energy Research, Development and Innovation (R thousands)	2015/16	2016/17	2017/18	2018/19		2019/20		2020/21		2021/22
	Audited Outcome	Audited Outcome	Preliminary outcome	Approved budget	Final Budget	Budget estimate	Revised budget estimate	Budget estimate	Revised budget estimate	Planning budget estimate
Cleaner fossil fuels	4,226	8,442	12,190	127,600	134,840	11,158	99 786	80,942	77,623	81 970
Smart Grids	675	28,826	81,283	-	77,410	-	53,679	500	5,385	5,687
Working for Energy	1,890	2,211	16,875	-	6,512	-	4,654	3,000	4,983	5,262
Renewable Energy ( Clean Energy Solutions)	7,414	9,283	36,252	2,838	29,863	3,508	21,469	1,189	16,279	23,610
Data and knowledge management	-	1,234	2,157	3,000	5,060	1,227	5,138	-	4,928	2,416
Cleaner mobility	-	-	-	-	-	-	-	-	-	-
Shale gas	-	817	4,199	-	5,600	-	-	-	-	-
<b>Total</b>	<b>14,245</b>	<b>50,813</b>	<b>152,956</b>	<b>133,438</b>	<b>259,285</b>	<b>15,893</b>	<b>85,631</b>	<b>155,277</b>	<b>29,646</b>	<b>118,945</b>



	2015/16	2016/17	2017/18	2018/19		2019/20			2020/21			2021/22
	Audited Outcome	Audited Outcome	Preliminary outcome	Approved budget	Final budget	Budget estimate	Revised budget estimate	Changes from budget estimate	Budget estimate	Revised budget estimate	Changes from budget estimate	Planning Budget Estimate
Rand thousand												
<b>Economic classification</b>												
Current payments	257,145	126,864	273,604	53,244	189,383	153,545	112,072	126,040	13,968	120,067	125,715	5,647
Compensation of employees	15,217	(4,999)	21,610	27,116	22,554	45,646	25,564	24,671	(893)	18,935	23,536	4,601
Salaries and wages	15,217	(4,999)	21,610	27,116	22,554	45,646	25,564	24,671	(893)	18,935	23,536	4,601
Social contributions	-	-	-	-	-	-	-	-	-	-	-	-
Goods and services	241,874	128,946	246,387	27,306	166,960	107,896	86,649	101,508	14,859	101,273	102,325	1,052
Of which <sup>1</sup>	-	-	-	-	-	-	-	-	-	-	-	-
Administrative fees	-	-	(8,835)	-	-	10,441	-	-	-	-	-	-
Advertising	-	-	(573)	-	-	2,004	-	-	-	-	-	-
Agency and support/outsourced services	1,955	174	1,482	(339)	(1,787)	(1,687)	(101)	1,598	1,699	(1,932)	1,531	3,464
Audit costs	-	-	(1,564)	-	-	1,636	-	-	-	-	-	-
Bank charges	-	-	(40)	-	-	75	-	-	-	-	-	-
Board costs	-	-	(906)	-	-	906	-	-	-	-	-	-
Bursaries (employees)	-	-	83	-	-	(77)	-	-	-	-	-	-
Catering: internal activities	-	-	(94)	-	-	94	-	-	-	-	-	-
Communication	(577)	161	1,391	(334)	(13)	3	(42)	(1)	41	(22)	36	58
Computer services	(480)	(467)	728	147	508	882	(46)	809	855	(23)	1,293	1,316
Consultants	(1,334)	1,964	3,229	(4,744)	(340)	3,618	(326)	63	389	1,253	311	(942)
Lease Payments	1,605	(44)	2,868	1,363	(94)	2,655	(101)	(98)	3	(53)	(63)	(10)
Legal fees	-	-	(110)	-	-	110	-	-	-	-	-	-
Non-life insurance	-	-	(292)	-	-	292	-	-	-	-	-	-
Printing and publication	-	-	(276)	-	-	286	-	-	-	-	-	-



Repairs and maintenance	(74)	307	(481)	(572)	170	841	(33)	278	311	(17)	461	478
Research and development	237,376	115,831	231,461	33,339	162,201	74,236	85,387	93,007	7,620	92,703	100,668	7,966
Training and staff development	168	294	960	(307)	(98)	182	(31)	466	497	(94)	504	598
Travel and subsistence	4,337	3,802	5,858	1,061	4,204	4,751	2,164	2,865	701	2,276	3,060	784
Other unclassified expenditure	(1,103)	6,926	11,497	(2,307)	2,209	6,649	(222)	2,520	2,742	7,182	(5,477)	(12,659)
Depreciation	54	2,349	5,607	(1,178)	(131)	3	(141)	(139)	2	(141)	(146)	(5)
Losses from	-	568	-	-	-	-	-	-	-	-	-	-
Sale of fixed assets	-	30	-	-	-	-	-	-	-	-	-	-
Impairments and Adjustments to Fair Value	-	538	-	-	-	-	-	-	-	-	-	-
<b>Transfers and subsidies</b>	<b>87,000</b>	-	-	-	-	-	-	-	-	-	-	-
Households and non-government units	-	-	-	-	-	-	-	-	-	-	-	-
Discretionary Grant (SETAs only)	87,000	-	-	-	-	-	-	-	-	-	-	-
Other government units	87,000	-	-	-	-	-	-	-	-	-	-	-
National government	-	-	-	-	-	-	-	-	-	-	-	-
Departmental agencies and accounts	-	-	-	-	-	-	-	-	-	-	-	-
Provinces	-	-	-	-	-	-	-	-	-	-	-	-
Municipalities	87,000	-	-	-	-	-	-	-	-	-	-	-
<b>Total Expenditure</b>	<b>344,145</b>	<b>126,864</b>	<b>273,604</b>	<b>53,244</b>	<b>189,383</b>	<b>153,545</b>	<b>112,072</b>	<b>126,040</b>	<b>13,968</b>	<b>120,067</b>	<b>125,715</b>	<b>5,647</b>



## 8 Programme 3: Energy Efficiency (EE)

The purpose of SANEDI's Energy Efficiency programme is to accelerate a shift towards a resource and particularly, an energy (including gas, liquid fuels, electricity and water) efficient society.

The programme does so by:

1. Supporting the implementation of EE interventions with technical assistance;
2. Knowledge creation that can support EE-related planning and decision-making. As such, the programme is concerned with developing a portfolio of assessed and demonstrated EE solutions as well as data assets that can support high confidence EE planning, decision-making and policy development in the country.
3. Accelerating the transformation of the EE market and landscape in the country. This entails building capacity (skills and competencies) and implementing market and/or industry development initiatives that will contribute to a culture of greater efficiency.

The EE programme does not have any sub-programmes defined.





### 8.1 Strategic objective and medium term targets for 2019/20-2021/22

Strategic Objective		5-year strategic plan target	Actual audited performance			Estimated performance 2018/19	Medium term targets		
			2015/16	2016/17	2017/18		2019/2020	2020/2021	2021/22
3.1	Accelerated adoption of EE solutions to optimise the use of finite resources	Assess 7 EE solutions and Implement 330 new/additional EE solutions by 2020	- 50	1 56	- 63	1 59	1 56	1 46	1 46
		Produce 4 EE sector insight and trend contributions to SANEDI’s annual insight and trend publication by 2020	New	-	1	1	1	1	1
		Maintain 6 EE-related datasets and Produce 7 reports from available datasets by 2020	1 1	5 1	6 2	6 1	6 2	6 1	6 1
		Host at least 55 industry development and knowledge sharing events by 2020	9	13	12	11	10	11	11
		Provide training to 415 energy-related recipients and Provide support to at least 73 researchers by 2020	35 16	80 14	- 15	100 13	100 13	100 12	100 12



## 8.2 Programme 3: Performance indicators and annual targets for 2019/20-2021/22

Programme Performance Indicator		5-year strategic plan target	Actual audited performance			Estimated performance 2018/19	Medium term targets		
			2015/16	2016/17	2017/18		2019/2020	2020/2021	2021/22
<b>Strategic objective 3.1:</b> Accelerated adoption of EE solutions to optimise the use of finite resources									
3.1.1	Number of EE solutions assessed (advisory notes, feasibility reports, complete study reports, case studies, technology roadmaps and operational demonstration facilities)	Assess 7 EE solutions by 2020	-	1	-	1	1	1	1
3.1.2	Number of EE solutions implemented (12I, 12L, AfD support projects, cool roofs)	Implement 778 new/additional EE solutions	50	560	63	59	56	56	56
3.1.3	Number of annual EE industry status report (insights, trends, international and national collaboration decisions, interfacing and forums)	Produce 4 EE sector insight and trend contributions to SANEDI's annual insight and trend publication by 2020	-	-	1	1	1	1	1
3.1.4	Number of EE energy-related datasets maintained per annum	Maintain 5 EE-related datasets over the period until 2020.	1	5	6	6	6	6	6
3.1.5	Number of EE research reports provided	Produce 7 reports from available datasets by 2020	1	1	-	1	2	2	2
3.1.6	Number of energy-related knowledge sharing events / platforms engaged in (own hosted, attended, knowledge presented, supported)	Host at least 55 industry development and knowledge sharing events by 2020	9	13	11	15	11	11	11
3.1.7	Number of recipients of energy-related training facilitated	Provide training to 415 energy-related recipients by 2020	35	80	-	100	100	100	100
3.1.8	Number of energy-related research students / contracted researchers supported (e.g. bursaries, non-bursaries, contract opportunities, infrastructure support, etc.)	Provide support to at least 73 researchers by 2020	16	14	14	13	13	13	13



### 8.3 Programme 3: Quarterly targets for 2019/20

Programme Performance Indicator		Reporting period	Annual Target 2019/20	Quarterly targets			
				1st	2nd	3rd	4th
3.1.1	Number of EE solutions assessed (advisory notes, feasibility reports, complete study reports, case studies, technology roadmaps and operational demonstration facilities)	Quarterly	1	-	-	1	-
3.1.2	Number of EE solutions implemented (12I, 12L, AfD support projects, cool roofs)	Quarterly	56	12	15	14	15
3.1.3	Number of annual EE industry status report (insights, trends, international and national collaboration decisions, interfacing and forums)	Annual	1	-	-	-	1
3.1.4	Number of EE energy-related datasets maintained per annum	Quarterly	6	-	2	2	2
3.1.5	Number of EE research reports provided	Quarterly	2	-	-	1	-
3.1.6	Number of energy-related knowledge sharing events / platforms engaged in (own hosted, attended, knowledge presented, supported)	Quarterly	11	2	3	4	2
3.1.7	Number of recipients of energy-related training facilitated	Quarterly	100	25	25	25	25
3.1.8	Number of energy-related research students / contracted researchers supported (e.g. bursaries, non-bursaries, contract opportunities, infrastructure support, etc.)	Quarterly	13	3	3	5	2



## 8.4 Reconciling performance targets with the Budget and MTEF

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
	<b>Audited Outcome</b>	<b>Audited Outcome</b>	<b>Preliminary outcome</b>	<b>Approved budget</b>	<b>Approved budget</b>	<b>Approved budget</b>	<b>Approved budget</b>
Programme 3: Energy Efficiency	7,305	4,784	631	7,384	7,790	8,663	9269



	2015/16	2016/17	2017/18	2018/19			2019/20			2020/21			2021/22
	Audited Outcome	Audited Outcome	Audited outcome	Budget estimate	Approved budget	Changes from approved budget	Planning Budget Estimate	Revised budget estimate	Changes from budget estimate	Budget estimate	Revised budget estimate	Changes from budget estimate	Planning Budget Estimate
Rand thousand													
<b><u>Economic classification</u></b>													
<b>Current payments</b>	<b>7,305</b>	<b>4,784</b>	<b>631</b>	<b>14,860</b>	<b>7,384</b>	<b>(7,476)</b>	<b>15,693</b>	<b>7,790</b>	<b>(7,903)</b>	<b>8,663</b>	<b>8,663</b>	<b>-</b>	<b>9,269</b>
Compensation of employees	7	-	-	3,384	4,884	1,500	3,574	5,153	1,579	5,880	5,880	-	6,292
Salaries and wages	7	-	-	3,384	4,884	1,500	3,574	5,153	1,579	5,880	5,880	-	6,292
Social contributions	-	-	-	-	-	-	-	-	-	-	-	-	-
Goods and services	7,298	4,784	631	11,476	2,500	(8,976)	12,119	2,638	(9,482)	2,783	2,783	-	2,977
Of which <sup>1</sup>													
Administrative fees			2			-			-			-	
Advertising			32			-			-			-	
Agency and support/outsourced services	3	-	-	-	1,430	1,430	-	1,509	1,509	1,592	1,592	-	1,703
Consultants	299	34	-	1,930	600	(1,330)	2,038	633	(1,405)	668	668	-	715
Printing and publication			5			-			-			-	
Research and development	5,911	1,228	308	9,189	-	(9,189)	9,704	-	(9,704)	-	-	-	-
Training and staff development	2	-	35	-	70	70	-	74	74	78	78	-	83
Travel and subsistence	765	392	249	357	400	43	377	422	45	445	445	-	476
Venues and facilities			-			-			-			-	
Other unclassified expenditure	318	3,130	-	-	-	-	-	-	-	-	-	-	-
Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Expenditure</b>	<b>7,305</b>	<b>4,784</b>	<b>631</b>	<b>14,860</b>	<b>7,384</b>	<b>(7,476)</b>	<b>15,693</b>	<b>7,790</b>	<b>(7,903)</b>	<b>8,663</b>	<b>8,663</b>	<b>-</b>	<b>9,269</b>



## Part C | Links to other plans



## 9 Links to long-term infrastructure and other capital plans

SANEDI's activities and contribution do not link to any long-term infrastructure plans.

## 10 Public-private partnerships

SANEDI is not currently part of any formal public-private partnerships as defined by South African law. SANEDI does, however, intend pursuing the establishment of such partnerships, particularly with metropolitan councils and municipality involvement. In such a case, a public-private partnership model will be explored to allow the local government institution to provide a concession to SANEDI to develop key projects in their jurisdiction. In the case where a private management company is required to operate a facility allocated to SANEDI on a concessional basis, it intends establishing a public-private partnership to manage such a relationship.

## 11 Partnerships with and contributions from development partners

SANEDI has established partnerships with a number of international development partners and receives support from these entities as follows:

Donor	Project name	Period of commitment	Audited Outcome	Audited Outcomes	Estimated Outcomes	Medium-term Expenditure Estimate		
			2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
DST	CESAR and EE Hub	48 months	R3,000,000	R7,500 000	R7,500 000	R7,500 000	-	TBD
Danish	Danish RE EE program	48 months	R12,406,155	-	-	-	-	TBD
EU Donor (RDP, GBS funds) <sup>18</sup>	EU AID Demo Project	60 months	R28,000 000	R68,000 000	-	-	-	TBD
WORLD BANK	PCSP Phase II	Not concluded	-	-	\$US 10.0 million	\$US 8.0 million	\$US 5 million	TBD
WORLD BANK	PCSP Phase I	24 months	-	2,700 000	1,100 000	-	-	TBD
DST	Solar RDI	36 months	R4,500,000	R4,500,000	R4,500,000	R4,500,000	R4,500,000	TBD
GIZ	12L tax Incentive	12 months	R2,900 000	R2,000 000	R2,000 000	R2,000 000	R2,000 000	TBD
SACCCS MEMBERS	SACCCS	Ongoing	-	-	200 000	300 000	400 000	TBD

<sup>18</sup> The EU value in kind for the Dialogue Facility is R2,000,000.00







## 12 Annexure A: Changes to the Strategic Plan

SANEDI's strategic outcome orientated goals, strategic objectives and programme performance indicators were restructured for the 2017/18 APP. This necessitated that revisions be made to SANEDI's Five-year Strategic Plan. As per the guidelines provided by the DPME, these changes required a partial review of the strategic plan.

The revisions to the performance framework were implemented in response to feedback received from the DPME. The following concerns were raised regarding the old structure that the new structure aims to address:

- The original performance framework was too activity focused, requiring a more outcome-orientated approach.
- Similarly, previous targets reflected activities rather than outputs or outcomes.
- The previous (2015/16) strategic outcome-orientated goals were too low level. It was recommended that these be adopted, with some reformulation, as strategic objectives.
- This necessitated the formulation of new strategic outcome-orientated goals for SANEDI.

The following revisions to the performance framework as per the APP were implemented:

- One new indicator was developed that measures implementation of the SANEDI ICT plan.
- Cosmetic changes to strategic objectives and performance indicators to eliminate duplication and overlaps.
- The templates presented in the APP were populated to reflect the intent shown in the template. E.g. if the column heading asks for "target" the appropriate cells in the template were not populated with actions, outputs, activities, projects, etc. but only the target as per the measurement unit reflected in the performance indicator.

SANEDI submitted a revised Strategic Plan for the period 2016/17 – 2020/21 which was approved by the Minister of Energy on 10 August 2016.



<b>2015/16 strategic outcome-orientated goals</b>	<b>2016/17 strategic outcome-orientated goals</b>	<b>Revised 2017/18 strategic outcome-orientated goals</b>
<p><b>Goal 1.</b> Enable well-informed and high confidence energy planning, decision-making and policy development.</p> <p><b>Goal Statement.</b> Develop a <b>technical knowledge base</b> of cost effective, proven (low risk) alternative, clean energy solutions and technologies to (1) adequately inform clear and coherent energy planning, policy development and decision-making and (2) enable the country's transition to a competitive, low carbon economy within the relevant planning horizon in support of the DOE and the energy sector/industry activities.</p>	<p><b>Goal 1.</b> Ensure universal access to affordable, reliable and modern energy.</p> <p><b>Goal Statement.</b> By 2030, SANEDI will aim to ensure that there is universal access to affordable, reliable and modern energy services by making a contribution through energy research, development, demonstration and deployment.</p>	<p><b>Goal 1.</b> A resilient, efficient, effective and enabling delivery environment that is aligned to/complies with all statutory requirements.</p> <p><b>Goal Statement.</b> An effective and efficient internal control environment (unqualified audits); a team that is adequately staffed, adequately skilled and trained and adequately representative of the national demographics (as defined in the relevant plans for SANEDI); effective risk management and effective and comprehensive stakeholder management.</p>
<p><b>Goal 2.</b> Support accelerated transformation to a less energy and carbon intensive economy.</p> <p><b>Goal statement.</b> Actively stimulate 'green' energy industry development, capacity building, skills development and job creation in response to the immediate concern of job scarcity and also support economic development and the critical transformation of the South African economic structure/activities to less energy and carbon intensive activities during the transition period identified by national commitments. (new growth path, climate change commitments).</p>	<p><b>Goal 2.</b> Increase substantially the share of RE in the global energy mix.</p> <p><b>Goal Statement.</b> By 2030, SANEDI will increased substantially the share of RE in the global energy mix through actively stimulating 'green' energy industry development, capacity building, skills development and job creation in response to the immediate concern of job scarcity and also support economic development and the critical transformation of the South African economic structure/activities to less energy and carbon intensive activities during the transition period identified by national commitments (new growth path, climate change commitments).</p>	<p><b>Goal 2.</b> Energy innovation, knowledge and skills for a less carbon intensive, more environmentally sustainable, affordable and efficient energy system.</p> <p><b>Goal Statement.</b> Identify and develop suitable, innovative energy solutions (150 projects), knowledge (9 datasets) and skills (1,000 researchers and trainees supported) towards a less carbon intensive, more environmentally sustainable, affordable and efficient energy system that can support the country's economic and socio-economic development objectives.</p>
<p><b>Goal 3.</b> Foster a culture of greater efficiency and more rational use of energy.</p> <p><b>Goal Statement.</b> Actively influence consumer consciousness and behaviour to improve the energy-efficiency of existing economic activity and energy consumption by 10% during the short-term (period of supply constraints) and to contribute to achieving an energy resource efficient (described by energy intensity levels on par with international benchmarks) society in the medium to long term (2020).</p>	<p><b>Goal 3.</b> Double the global rate of improvement in EE.</p> <p><b>Goal Statement.</b> Actively influence consumer consciousness and behaviour to improve the energy-efficiency of existing economic activity and energy consumption by 10% during the short-term (period of supply constraints) and to contribute to achieving an energy resource efficient (described by energy intensity levels on par with international benchmarks) society in the medium to long term (2020).</p>	



<u>2015/16 strategic outcome-orientated goals</u>	<u>2016/17 strategic outcome-orientated goals</u>	<u>Revised 2017/18 strategic outcome-orientated goals</u>
	<p><b>Goal 4.</b> Enhance international cooperation to facilitate access to clean energy research and technology.</p> <p><b>Goal Statement.</b> By 2030, international cooperation will be enhanced to facilitate access to clean energy research and technology, including RE, EE and advanced and cleaner fossil fuel technology and promote investment in energy infrastructure and clean energy technology.</p> <p><b>Goal 5.</b> Expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all.</p> <p><b>Goal Statement.</b> Expand infrastructure and upgrade technology by 2030 for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing states and land locked developing counties in accordance with their respective programmes of support.</p>	

<u>2015/16 strategic objectives (SO)</u>	<u>2016/17 strategic objectives (SO)</u>	<u>Revised 2017/18 strategic objectives (SO)</u>
<p><b>SO1:</b> Corporate, executive, financial, information, supply chain management, governance and compliance support to the Institute.</p>	<p><b>SO1.</b> Compliance with DOE’s compliance calendar in respect of strategic plans, annual performance plans, annual reports and quarterly reports.</p>	<p><b>SO1:</b> An effective and efficient internal control environment.</p>
<p><b>SO2:</b> Strong collaborative approach and strategic international collaboration.</p>	<p><b>SO2.</b> Effective financial processes and systems and procedures for Finance /Supply Chain Management.</p>	<p><b>SO2:</b> A team that is adequately staffed, adequately skilled and trained and adequately representative of the national demographics.</p>
<p><b>SO3:</b> Knowledge creation in support of policy direction, i.e. viable cleaner energy options.</p>	<p><b>SO3.</b> Highly motivated team of employees who are managed according to best practice thereby contributing optimally to the achievement of organisational goals.</p>	<p><b>SO3:</b> Effective risk management on risk areas affecting SANEDI.</p>



<b>2015/16 strategic objectives (SO)</b>	<b>2016/17 strategic objectives (SO)</b>	<b>Revised 2017/18 strategic objectives (SO)</b>
<b>SO4:</b> Knowledge creation in the energy mobility and green transport sector in support of policy direction.	<b>SO4.</b> Corporate and Programme Marketing and Communications.	<b>SO4:</b> Effective and comprehensive stakeholder engagement.
<b>SO5:</b> Intelligent energy systems infrastructure.	<b>SO5.</b> Technical Report addressing the implications and recommendations for the exploitation of shale gas in SA.	<b>SO5:</b> Energy-related support, information and advice to inform high confidence energy planning, decision-making and policy development.
<b>SO6:</b> Demonstrate cleaner energy technology opportunities and solutions.	<b>SO6.</b> Proof of concept and capacity building for carbon dioxide storage in SA.	<b>SO6:</b> Accelerated transformation to a less energy and carbon intensive economy.
<b>SO7:</b> Due custodianship of knowledge and data developed within SANEDI.	<b>SO7.</b> Determination of a business case for the commercialisation of carbon capture and storage.	<b>SO7:</b> Accelerated adoption of EE solutions to optimise the use of finite resources.
<b>SO8:</b> Support the Income Tax Amendment Act section 12I and 12L relating to the tax rebate for EE improvements.	<b>SO8.</b> Increased deployment of RE.	
<b>SO9:</b> Management of the EEDSM Hub and oversight of the Hub to a CORD.	<b>SO9.</b> Increased RE and EE awareness.	
<b>SO10:</b> Provide Industry support and capacity building.	<b>SO10.</b> Raised SA's RE R&D profile through international collaboration and capacity building.	
<b>SO11:</b> Provide a National Champion coordinating service for all EE awareness and promotion initiatives.	<b>SO11.</b> Increased wind energy integration and deployment in SA.	
<b>SO12:</b> Establish a National Measurement and Verification Centre.	<b>SO12.</b> To research essential aspects of Clean Energy relating to the provision clean energy solutions to rural and low income communities.	
	<b>SO13.</b> To Implement Clean Energy technologies and services to low income communities.	
	<b>SO14.</b> On the Job Training.	
	<b>SO15.</b> Electricity supply industry capacity building through workshops, knowledge sharing, international and local collaboration	
	<b>SO16.</b> Trained energy modellers to undertake energy modelling research.	
	<b>SO17.</b> Policy recommendations based on research projects conducted Energy modelling database.	



<u>2015/16 strategic objectives (SO)</u>	<u>2016/17 strategic objectives (SO)</u>	<u>Revised 2017/18 strategic objectives (SO)</u>
	<p><b>SO18.</b> Provide assurance to SARS on energy savings claims, in line with published regulations, and perform a reporting function to key stakeholders (DOE, NT, SARS (through NT), and <b>the dti</b>) by : issuing EE tax certificates for approved and compliant applications and copying them to the Revenue.</p> <p><b>SO19.</b> To support and provide capability building through designed programmes in the area of EE.</p> <p><b>SO20.</b> To fulfil the role of a national EE champion through collaborative activities with industry partners aimed at the promotion of new technologies, thereby increasing the uptake of energy efficient technologies.</p>	

The following five-year targets were defined for the newly strategic objectives:

<u>Revised 2017/18 strategic objectives</u>	<u>Five (5) year target over the MTEF period (i.e. 2019/20)</u>
<b>SO1:</b> An effective and efficient internal control environment.	Unqualified audit by 2019/20.
<b>SO2:</b> A team that is adequately staffed, adequately skilled and trained and adequately representative of the national demographics.	Maintain a vacancy rate of less than 5% for funded positions, 95% personnel trained as per the workplace skills plan and less than 5% deviation from the SANEDI approved employment equity targets over the planning period.
<b>SO3:</b> Effective risk management on risk areas affecting SANEDI.	All (100%) critical strategic and operational risk factors are identified and mitigated over the period to 2019/20.
<b>SO4:</b> Effective and comprehensive stakeholder engagement.	95% implementation of stakeholder engagement plan and 80% positive stakeholder feedback obtained by 2019/20.
<b>SO5:</b> Energy-related support, information and advice to inform high confidence energy planning, decision-making and policy development.	Achieve and maintain <b>at least 80% customer satisfaction</b> with the adequacy of SANEDI’s knowledge portfolio to inform clear and coherent energy planning, policy development and decision-making by 2019/20.
<b>SO6:</b> Accelerated transformation to a less energy and carbon intensive economy.	<p><b>At least 40 additional energy-related market and/or industry development initiatives</b> contributed towards the green economy by 2020; and</p> <p>A growing pool of energy-related skills and capacity in the energy sector with the addition of <b>at least 1,000 newly trained individuals and active researchers supported in the field</b> by 2020.</p>



<b>Revised 2017/18 strategic objectives</b>	<b>Five (5) year target over the MTEF period (i.e. 2019/20)</b>
<p><b>SO7:</b> Accelerated adoption of EE solutions to optimise the use of finite resources.</p>	<p>Increased uptake/adoption of EE solutions with 750 new EE solutions implemented in the country by 2020;</p> <p>Development of a EE knowledge portfolio contributed by <b>50 active researchers</b> in the EE field and <b>5 EE-related datasets</b> maintained over the planning period to 2020; and</p> <p>Establishment of a <b>comprehensive, new cool surfaces industry in South Africa</b> (including skills and capacity developed among both professionals (at least 50) and applicators (at least 200), establishment of an industry association, national standards adopted, testing laboratory established and approved product database developed and maintained) by 2020.</p>



## 13 Annexure B: Technical indicator descriptions and definitions

### 13.1 Performance framework definitions

The following terms used in SANEDI's performance framework were defined to ensure a common understanding and consistent interpretation by implementers and auditors:

Term (alphabetically listed)	Definition	Relevant SG <sup>19</sup> , SO or PPI
Affordable	Affordable, as used in SANEDI's strategic outcome-orientated goal to describe the energy system, refers to an energy solutions that can be delivered at a levelised cost of energy that is within the means of the economy. When considering affordability in the context of the wider economy, all costs (including capital investment, operating costs, environmental impacts, climate change, air quality and health) should be considered.	SG2
Assessed	The assessment of energy solutions may be done through desktop studies, feasibility assessments, cost benefit analyses, pilot projects, demonstration plants, or retrospectively through impact assessments/studies or case studies based on piloted, demonstrated or implemented solutions. The results of assessments would be communicated using any one of (i) advisory notes, (ii) comprehensive reports, (iii) feasibility reports, (iv) case studies, (v) technology roadmaps or (vi) policy recommendations, or (vii) showcasing of demonstrated facilities, among others.	PPI 2.1.1
Cleantech solutions	Refers to a cleantech concept, technology, application or solution that is taken from research and development to the market through incubation of a new business, commercialisation of the technology/solution or broader market adoption or deployment as a result of SANEDI support.	PPI 2.2.3
Dataset	May also be referred to as an inventory, data repository or database. The term is used to describe a store of information collected and related to a field of study. A dataset may consist of measured data points (seismic measurement data), data records (e.g. EXCO register or BigEE appliance data), a repository of information and/or publications (e.g. RECORD library of industry publications and information).	PPI 2.1.3
Demonstration project	Physical installation or implementation of an energy solution to demonstrate and assess performance. A project may consist of multiple similar installations to demonstrate one solution at a suitable scale. Different projects may be defined to test similar solutions with specific or unique differences in technology application, geographic location, climatic conditions, social and/or cultural conditions. A project unit will be clearly defined within this context.	PPI 2.2.1
Enabled	Used with specific reference to skills development and particularly with respect to researchers that are active or productive in the	PPI 2.2.5

<sup>19</sup> SG | strategic outcome orientated goal; SO | Strategic Objective; PPI | Programme Performance Indicator



Term (alphabetically listed)	Definition	Relevant SG <sup>19</sup> , SO or PPI
	sector as a result of SANEDI support. Research can be made possible (enabled) through a bursary, a part bursary or non-bursary support.	
Energy solutions	Energy solutions may include entirely new technologies, application of new or old technologies in different configurations, locations or environments, adoption of international technologies in South African conditions or altered applications or operational regimes of existing energy solutions or technologies.	PPI 2.1.1
Facilitated	Training facilitated by SANEDI incorporates courses offered directly by SANEDI, courses taught by a SANEDI representative(s), courses presented as a result of sponsorship from/via SANEDI or attendance of a course by individuals made possible by SANEDI. (Refer also definition of training / skills development with respect to format and recipients of training.)	PPI 2.2.4
Industry development platforms	Platforms or fora created with main activities related to dissemination, lobbying and information sharing of local and global industry developments. Platforms and knowledge sharing events aim to promote harmonious collaboration of all stakeholders (including industry, local and national government, academia, international experts, etc.)	PPI 2.2.2
Knowledge sharing events	Events including workshops, webinars and conferences with main activities related to dissemination, lobbying and information sharing of local and global industry developments. Platforms and knowledge sharing events aim to promote harmonious collaboration of all stakeholders (including industry, local and national government, academia, international).	PPI 2.2.2
Maintain	Maintain, as it relates to the datasets/databases, entails continual data collection, updating and/or expansion of the datasets with the most current and relevant data. This is not an IT maintenance function. For the sake of the performance indicator, data maintenance covers all activities from development of the dataset, collation and updating of information. The establishment of a new dataset or database will therefore also be reflected under this measure.	PPI 2.2.2
Researchers	Researchers (including pre- or post-graduate students, research chairs, fellowships and professionals), at formal research institutions including institutions for tertiary education (universities, technical colleges, universities of technology), research institutes, research organisations or NGOs	PPI 2.2.5
Training / skills development	Dedicated / focused training sessions aimed at building capacity and skills at various levels (school goers, teachers, train-the-trainers, students, industry players) varying from half a day to full length courses.	PPI 2.2.4





## 13.2 Programme 1: Technical Indicator Descriptions

### 13.2.1 Strategic objectives

Indicator Title	<b>1.1 An effective and efficient internal control environment.</b>
Short Definition	Ensuring the internal control environment is adequately effective and efficient for full statutory compliance while creating an enabling delivery environment for the organisation throughout the planning period.
Purpose/importance	Ensures that the financial statements of SANEDI fairly present its affairs in all material aspects and embodies the assumption that SANEDI observed compliance with generally accepted accounting principles and statutory requirements.
Source/collection of data	Internal and external audit reports.
Method of calculation	Audit opinion.
Data limitations	None.
Type of indicator	Measures outcome.
Calculation type	Non-cumulative.
Reporting cycle	Quarterly performance and internal audits and Annual external audit.
New indicator	Continues with limited change from previous year.
Desired performance	Unqualified audit or a clean audit.
Indicator Responsibility	Responsibility for reporting resides with CFO of SANEDI.

Indicator Title	<b>1.2 A team that is adequately staffed, adequately skilled and trained and adequately representative of the national demographics.</b>
Short Definition	A team that is adequately staffed i.e. with no more than a 5% vacancy rate of funded positions, adequately skilled with 95% personnel trained in accordance with the Workplace Skills Plan (WSP) and adequately representative of the national demographics with less than 5% deviation from the SANEDI approved employment equity targets throughout the planning period.
Purpose/importance	A full and diverse staff complement where employees are well-trained and continually developed are imperatives for high quality delivery, staff satisfaction and loyalty, employee retention and ultimately organisational productivity.
Source/collection of data	A <b>composite measure</b> derived across the various programme performance indicators.
Method of calculation	Performance tracking against the stated targets for each indicator (see programme performance indicators for vacancy rate, percentage personnel trained and percentage deviation from employment equity targets).
Data limitations	None.
Type of indicator	Measures output.
Calculation type	Non-cumulative.
Reporting cycle	Quarterly performance and internal audits and Annual external audit.
New indicator	Continues with limited change from previous year.
Desired performance	Unqualified audit or a clean audit.
Indicator Responsibility	Responsibility for reporting resides with the HR Manager of SANEDI.



Indicator Title	<b>1.3 Effective risk management on risk areas affecting SANEDI.</b>
Short Definition	Ensure all (100%) critical risks are identified and mitigated throughout the planning period.
Purpose/importance	Risk relates to external or internal influences or occurrences that make it uncertain whether, when and to what extent the organisation will achieve its objectives. By actively identifying and managing risks, the organisation can better navigate uncertainty and improve the chances of delivering on their stated objectives.
Source/collection of data	As measured by the relevant performance indicator for risk management.
Method of calculation	Performance tracking against the stated targets for the relevant programme performance indicator.
Data limitations	None.
Type of indicator	Measures output.
Calculation type	Non-cumulative.
Reporting cycle	Quarterly risk management reports.
New indicator	Continues with limited change from previous year.
Desired performance	Achieve the stated target.
Indicator Responsibility	Responsibility for reporting resides with the relevant Risk Manager.

Indicator Title	<b>1.4 Effective and comprehensive stakeholder management.</b>
Short Definition	95% implementation of stakeholder engagement plan (SEP) and 80% positive stakeholder feedback achieved by 2019/2020.
Purpose/importance	A structured approach to stakeholder engagement aims to build productive relationships, foster greater collaboration and ensure that SANEDI prioritises and meets its most pertinent objectives. Stakeholder feedback will be used to assess whether SANEDI is adequately engaging with its stakeholders.
Source/collection of data	A composite measure derived across the two relevant programme performance indicators.
Method of calculation	Performance tracking against the stated targets for each indicator.
Data limitations	None.
Type of indicator	Measures outcome.
Calculation type	Non-cumulative.
Reporting cycle	Quarterly.
New indicator	New indicator.
Desired performance	Achieve at least the stated targets or better.
Indicator Responsibility	Responsibility for reporting resides with General Manager for Communication.

### 13.2.2 Programme performance indicators

Indicator Title	<b>1.1.1 Unqualified audits</b>
Short Definition	Achieve an unqualified audit in 2017/18 and maintain over the planning period.



Purpose/importance	Internal and external audits effectively assess the adequacy of SANEDI’s control environment with respect Finance, Procurement and ICT. Unqualified audits provide assurance that an effective and efficient control environment has been established.
Source/collection of data	Internal and external audit report.
Method of calculation	Audit opinion.
Data limitations	None.
Type of indicator	Measures outcome.
Calculation type	Non-cumulative.
Reporting cycle	Quarterly performance and internal audits and Annual external audit.
New indicator	Continues with limited change from previous year.
Desired performance	Unqualified audit or a clean audit.
Indicator Responsibility	Responsibility for reporting resides with CFO of SANEDI.

Indicator Title	<b>1.2.1 Vacancy rate maintained within an acceptable range.</b>
Short Definition	Vacancy rate maintained every year within 5% vacancy rate <b>of funded positions.</b>
Purpose/importance	Ensure adequate human resources available to support delivery on SANEDI objectives.
Source/collection of data	Number of vacancies against the approved and funded organisational structure.
Method of calculation	Count of vacancies as a percentage of the approved and funded positions in the organisational structure.
Data limitations	None.
Type of indicator	Measures outcome.
Calculation type	Non-cumulative.
Reporting cycle	Quarterly.
New indicator	New indicator.
Desired performance	5% or less vacancy rate is desirable.
Indicator Responsibility	Responsibility for reporting resides with the HR Manager.

Indicator Title	<b>1.2.2 Percentage of personnel trained as per Workplace Skills Plan (WSP).</b>
Short Definition	Active development of skills and competencies within the SANEDI team, achieving at least 95% of personnel trained as per SANEDI’s approved Workplace Skills Plan as relevant for each year.
Purpose/importance	Ensure staff members are suitably trained and skilled for SANEDI to become the leading clean energy solution provider for a low carbon South Africa.
Source/collection of data	HR records of staff training.
Method of calculation	Assess achieved training against WSP.
Data limitations	Data relating to training not funded by SANEDI would have to be specially collected.
Type of indicator	Measures activity.
Calculation type	Non-cumulative.



Reporting cycle	Quarterly.
New indicator	New indicator.
Desired performance	Achieving 95% or more against WSP.
Indicator Responsibility	Responsibility for reporting resides with the HR Manager.

Indicator Title	<b>1.2.3 Percentage deviation from employment equity targets maintained within acceptable range</b>
Short Definition	A team that is adequately representative of the national demographics with no more than 5% deviation from SANEDI approved employment equity targets throughout the planning period.
Purpose/importance	Ensure SANEDI staff complement is suitably reflective of the country's demographics and in compliance with the EE Act, Act 55 of 1998.
Source/collection of data	HR records.
Method of calculation	Assess achieved against SANEDI approved Employment Equity Plan (EEP).
Data limitations	None.
Type of indicator	Measures outcome.
Calculation type	Non-cumulative.
Reporting cycle	Quarterly.
New indicator	New indicator.
Desired performance	Achieving less than 5% deviation against EEP.
Indicator Responsibility	Responsibility for reporting resides with the HR Manager.

Indicator Title	<b>1.3.1 Effective risk management on risk areas affecting SANEDI.</b>
Short Definition	All (100%) critical strategic and operational risks factors are identified and mitigated throughout the planning period.
Purpose/importance	Ensure SANEDI are aware of and actively mitigates and manages strategic and operational risks that would impede delivery against targeted objectives.
Source/collection of data	Strategic and operational risk assessment workshops, SANEDI Risk Reports and Internal Audit Risk Reports.
Method of calculation	Records of workshops and reports.
Data limitations	None.
Type of indicator	Measures compliance.
Calculation type	Non-cumulative.
Reporting cycle	Quarterly.
New indicator	New indicator.
Desired performance	Full compliance.
Indicator Responsibility	Responsibility for reporting resides with the General Manager responsible for Risk and the Corporate Planner.



Indicator Title	<b>1.4.1 Percentage implementation of stakeholder engagement plan (SEP).</b>
Short Definition	Proactive and targeted engagement with SANEDI stakeholders achieved by developing and implementing an effective and comprehensive stakeholder engagement plan (SEP) and ensuring at least 95% implementation according to the annual, approved plan.
Purpose/importance	Proactively and effectively build relationships and interfaces with SANEDI's key stakeholders to ensure effective service delivery.
Source/collection of data	Stakeholder engagement events and activities measured against the SEP.
Method of calculation	Assess achieved engagements against SEP.
Data limitations	All engagements to be recorded.
Type of indicator	Measures activity.
Calculation type	Non-cumulative.
Reporting cycle	Quarterly.
New indicator	Continues without change from previous year.
Desired performance	95% or greater implementation of SEP.
Indicator Responsibility	Responsibility for reporting resides with the Public Awareness Officer, Communications.



## 13.3 Programme 2: Technical Indicator Descriptions

### 13.3.1 Strategic objectives

Indicator Title	<b>2.1. Energy-related support, information and advice to inform high confidence energy planning, decision-making and policy development.</b>
Short Definition	A knowledge portfolio contribution that consists of at least 90 assessed energy solutions, 3 annual industry insight publications, 4 energy datasets maintained and 37 data analyses completed.
Purpose/importance	Ensure that SANEDI's energy-related support, information and advice are appropriate to inform high confidence energy planning, decision-making and policy development as intended.
Source/collection of data	Collated across performance indicators for all sub-programmes of programme 2.
Method of calculation	Summate across performance indicators.
Data limitations	None.
Type of indicator	Measures outputs
Calculation type	Cumulative
Reporting cycle	Quarterly
New indicator	New indicator
Desired performance	Achieve at least the stated numbers or more
Indicator Responsibility	Responsibility for reporting resides with the respective GMs and the Office of the CEO

Indicator Title	<b>2.2. Accelerated transformation to a less energy and carbon intensive economy.</b>
Short Definition	Actively contribute to develop the industry, incubate or commercialise new clean energy technologies and develop skills and capacity in the sector by 2020.
Purpose/importance	Support the accelerated transformation of economic activities and contributing to a suitably skilled and capacitated workforce for the green economy with (i) <b>at least 40 additional energy-related market and/or industry development initiatives</b> towards the green economy and (ii) a growing pool of energy-related skills and capacity in the energy sector with the addition of <b>at least 1500 newly trained individuals or active researchers supported in the field.</b>
Source/collection of data	Collated across performance indicators for all sub-programmes of programme 2.
Method of calculation	Summate across performance indicators.
Data limitations	None.
Type of indicator	Measures impact.
Calculation type	Cumulative.
Reporting cycle	Quarterly.
New indicator	New indicator.
Desired performance	Achieve at least the stated targets or more.
Indicator Responsibility	Responsibility for reporting resides with the respective GMs and the Office of the CEO.



### 13.3.2 Programme performance indicators

Indicator Title	<b>2.1.1 Number of energy solutions assessed.</b>
Short Definition	Assess and/or demonstrate at least 92 energy solutions for relevance in South Africa by 2020.
Purpose/importance	Develop a portfolio of assessed or demonstrated energy solutions that can inform high-confidence energy planning, decision-making and policy development.
Source/collection of data	As confirmed by (i) advisory notes, (ii) feasibility reports, (iii) complete study reports, (iv) case studies, (v) technology roadmaps and (vi) operational demonstration facilities, among others.
Method of calculation	Count outputs collated across all sub-programmes.
Data limitations	Outputs not published or released to the public or intended recipients because of Government moratorium, preference or sensitivity of content.
Type of indicator	Measures outputs.
Calculation type	Cumulative.
Reporting cycle	Quarterly.
New indicator	New indicator.
Desired performance	Achieve at least the stated target or more.
Indicator Responsibility	Responsibility for reporting reside with the respective General Managers of sub-programmes.

Indicator Title	<b>2.1.2 Annual energy industry insight (trends) publication</b>
Short Definition	Annual energy industry insight (trends) publication reflecting insights from extensive international and national collaboration, interfacing and forums produced annually.
Purpose/importance	Produce an annual industry insights publication that can support and inform high-confidence energy planning, decision-making and policy development throughout the sector.
Source/collection of data	Published industry insights publication.
Method of calculation	Count outputs.
Data limitations	None.
Type of indicator	Measures outputs.
Calculation type	Non-cumulative.
Reporting cycle	Annual.
New indicator	New indicator.
Desired performance	Achieve at least the stated target or more.
Indicator Responsibility	Responsibility for sector inputs resides with the respective General Managers; responsibility for final publication resides with the CEO of SANEDI.

Indicator Title	<b>2.1.3 Number of current energy datasets maintained.</b>
Short Definition	Develop and maintain (update and expand) at least 4 energy-related datasets by 2020.
Purpose/importance	Collate and keep safe a current and relevant knowledge asset that can support and inform high-confidence energy planning, decision-making and policy development throughout the sector.
Source/collection of data	Datasets developed and maintained.



Method of calculation	Count outputs collated across all sub-programmes.
Data limitations	None.
Type of indicator	Measures outputs.
Calculation type	Cumulative for the year, non-cumulative over the planning period.
Reporting cycle	Quarterly.
New indicator	New indicator.
Desired performance	Achieve at least the stated target or more.
Indicator Responsibility	Responsibility for reporting resides with the respective General Managers that leads sub-programmes and/or programmes.

Indicator Title	<b>2.1.4 Number of relevant data analyses and reports drawn from available datasets.</b>
Short Definition	Analyse available data and produce 37 reports from datasets developed by SANEDI by 2020.
Purpose/importance	Draw information from available data, producing analyses, results, findings and recommendations that can support and inform high-confidence energy planning, decision-making and policy development throughout the sector.
Source/collection of data	Papers and reports produced and delivered.
Method of calculation	Count outputs collated across all sub-programmes.
Data limitations	None.
Type of indicator	Measures outputs.
Calculation type	Cumulative.
Reporting cycle	Quarterly.
New indicator	New indicator.
Desired performance	Achieve at least the stated target or more.
Indicator Responsibility	Responsibility for reporting with the respective General Managers that leads sub-programmes and/or programmes.

Indicator Title	<b>2.2.1 Energy-related market/industry development initiatives.</b>
Short Definition	Develop 22 industry roadmaps, sector development plans and industry support tools to promote energy-related market/industry development by 2020.
Purpose/importance	Develop plans and tools that will accelerate industry development and market transformation towards the green economy.
Source/collection of data	Count of industry roadmaps, sector development plans and industry development/support tools, developed.
Method of calculation	Count outputs collated across all sub-programmes.
Data limitations	None.
Type of indicator	Measures outputs.
Calculation type	Cumulative.
Reporting cycle	Quarterly.





New indicator	New indicator.
Desired performance	Achieve at least the stated target or more.
Indicator Responsibility	Responsibility for reporting with the respective General Managers that lead sub-programmes.

Indicator Title	<b>2.2.2 Hosted energy-related industry development events.</b>
Short Definition	Host at least 40 industry knowledge sharing events and platforms to promote energy-related market/industry development by 2020.
Purpose/importance	Host events and platforms that enable knowledge sharing and industry-wide collaboration that will accelerate industry development and market transformation towards the green economy.
Source/collection of data	Count of knowledge sharing events hosted.
Method of calculation	Count outputs collated across all sub-programmes.
Data limitations	None.
Type of indicator	Measures outputs.
Calculation type	Cumulative.
Reporting cycle	Quarterly.
New indicator	New indicator.
Desired performance	Achieve at least the stated target or more.
Indicator Responsibility	Responsibility for reporting with the respective General Managers that lead sub-programmes.

Indicator Title	<b>2.2.3 Number of commercially viable cleantech concepts progressed to active business incubation and/or deployment.</b>
Short Definition	Progress at least 6 viable cleantech concepts to active business incubation and/or deployment by 2020.
Purpose/importance	Stimulate local industrialisation by taking new technologies from research and demonstration to active business incubation and/or deployment.
Source/collection of data	Count of new cleantech concepts, technologies or solutions.
Method of calculation	Count outputs collated across all sub-programmes.
Data limitations	None.
Type of indicator	Measures outputs.
Calculation type	Cumulative.
Reporting cycle	Annual.
New indicator	New indicator.
Desired performance	Achieve at least the stated target or more.
Indicator Responsibility	Responsibility for reporting with the respective General Managers that leads sub-programmes and/or programmes.

Indicator Title	<b>2.2.4 Number of recipients of energy-related training facilitated by SANEDI.</b>
Short Definition	Extend training offered or facilitated by SANEDI to at least 1,500 recipients by 2020.



Purpose/importance	Stimulate and strengthen activity in the green economy by creating relevant awareness, skills and capacity.
Source/collection of data	Count of trainees attending SANEDI offered or facilitated training. This may include interns hosted at SANEDI for on-the-job training, course and workshop attendees.
Method of calculation	Count records of attendees.
Data limitations	Documented and signed attendance registers.
Type of indicator	Measures outputs.
Calculation type	Cumulative.
Reporting cycle	Quarterly.
New indicator	New indicator.
Desired performance	Achieve at least the stated target or more.
Indicator Responsibility	Responsibility for reporting with the respective General Managers that leads sub-programmes and/or programmes.

Indicator Title	<b>2.2.5 Number of active researchers contributing to energy research leadership enabled by a SANEDI programme.</b>
Short Definition	Support for at least 45 full time energy research studies through bursaries or non-bursary support by 2020.
Purpose/importance	Stimulate and strengthen energy skills development, research and innovation by enabling students and researchers in the sector.
Source/collection of data	Count of pre- or post-graduate students, research chairs, fellowships, or other supported/enabled by a SANEDI programme or bursary.
Method of calculation	Count outputs collated across all sub-programmes.
Data limitations	None.
Type of indicator	Measures outputs.
Calculation type	Cumulative.
Reporting cycle	Annual.
New indicator	New indicator.
Desired performance	Achieve at least the stated target or more.
Indicator Responsibility	Responsibility for reporting with the respective General Managers that leads sub-programmes and/or programmes.



## 13.4 Programme 3: Technical Indicator Descriptions

### 13.4.1 Strategic objectives

Indicator Title	<b>3.1. Accelerated adoption of Energy Efficiency (EE) solutions to optimise the use of finite resources.</b>
Short Definition	Increase the uptake/adoption of and exposure to EE solutions with 750 new EE solutions implemented, development of a knowledge portfolio (50 active EE researchers and 5 EE datasets) and establishment of a comprehensive, new cool surfaces industry in South Africa over the planning period to 2020.
Purpose/importance	Accelerate the adoption of EE measures in the country by providing technical expertise
Source/collection of data	A <b>composite measure</b> derived from the programme 3 performance indicators.
Method of calculation	Performance tracking against the stated targets for each indicator (see programme performance indicators for implemented EE interventions, active researchers, number of current datasets and establishment of the cool surfaces industry.
Data limitations	None.
Type of indicator	Measures output.
Calculation type	Cumulative.
Reporting cycle	Quarterly.
New indicator	New indicator.
Desired performance	Achieve at least the stated target or more.
Indicator Responsibility	Responsibility for reporting with the General Managers for EE.

### 13.4.2 Programme performance indicators

Indicator Title	<b>3.1.1 Number of EE solutions implemented.</b>
Short Definition	Support the implementation of 750 additional EE solutions in the country by 2020.
Purpose/importance	Accelerate the adoption of EE in the country by actively supporting implementation of EE interventions with technical assistance.
Source/collection of data	Number 12I and 12L, AfD supported projects and cool surfaces installations implemented.
Method of calculation	Count of solutions implemented.
Data limitations	None.
Type of indicator	Measures outputs.
Calculation type	Cumulative.
Reporting cycle	Quarterly.
New indicator	New indicator.
Desired performance	Achieve at least the stated target or more.
Indicator Responsibility	Responsibility for reporting with the General Managers for EE.



Indicator Title	<b>3.1.2 Number of EE solutions assessed.</b>
Short Definition	Assess at least 3 EE solutions by 2020 for relevance to local applications.
Purpose/importance	Assess new EE solutions to inform the promotion of suitable technologies, enable improved technical assistance to EE implementation projects and inform planning, policy- and decision-making, thereby accelerating the adoption of EE in the country.
Source/collection of data	As confirmed by (i) advisory notes, (ii) feasibility reports, (iii) complete study reports, (iv) case studies, (v) technology roadmaps, (vi) operational demonstration facilities that document an assessed EE solution.
Method of calculation	Count of EE solutions assessed.
Data limitations	Outputs not published or released to the public or intended recipients because of Government moratorium, preference or sensitivity of content.
Type of indicator	Measures outputs.
Calculation type	Cumulative.
Reporting cycle	Quarterly.
New indicator	New indicator.
Desired performance	Achieve at least the stated target or more.
Indicator Responsibility	Responsibility for reporting with the General Managers for EE.

Indicator Title	<b>3.1.3 Annual EE industry insight (trends) publication.</b>
Short Definition	Annual EE industry insight (trends) publication reflecting insights from extensive international and national collaboration, interfacing and forums.
Purpose/importance	Produce an annual industry insights publication that can support and inform high-confidence EE planning, decision-making and policy development throughout the sector.
Source/collection of data	Published industry insights publication.
Method of calculation	Count outputs.
Data limitations	None.
Type of indicator	Measures outputs.
Calculation type	Non-cumulative.
Reporting cycle	Annual.
New indicator	New indicator.
Desired performance	Achieve at least the stated target or more.
Indicator Responsibility	Responsibility for sector inputs resides with the General Manager EE.

Indicator Title	<b>3.1.4 Number of current energy datasets maintained.</b>
Short Definition	Develop and maintain (update and expand) 44 energy-related datasets.
Purpose/importance	Collate and keep safe a current and relevant knowledge asset that can support and inform high-confidence energy planning, decision-making and policy development throughout the sector.
Source/collection of data	Datasets developed and maintained.



Method of calculation	Count outputs collated across all sub-programmes.
Data limitations	None.
Type of indicator	Measures outputs.
Calculation type	Cumulative for the year.
Reporting cycle	Quarterly.
New indicator	New indicator.
Desired performance	Achieve at least the stated target or more.
Indicator Responsibility	Responsibility for sector inputs resides with the General Manager EE.

Indicator Title	<b>3.1.5 Number of relevant data analyses and reports drawn from available datasets.</b>
Short Definition	Analyse available data and produce 4 reports from available datasets.
Purpose/importance	Draw information from available data, producing analyses, results, findings and recommendations that can support and inform high-confidence energy planning, decision-making and policy development throughout the sector.
Source/collection of data	Papers and reports produced and delivered.
Method of calculation	Count outputs collated across all sub-programmes.
Data limitations	None.
Type of indicator	Measures outputs.
Calculation type	Cumulative.
Reporting cycle	Quarterly.
New indicator	New indicator.
Desired performance	Achieve at least the stated target or more.
Indicator Responsibility	Responsibility for sector inputs resides with the General Manager EE.

Indicator Title	<b>3.1.6 EE-related market/industry development plans and tools</b>
Short Definition	Develop at least 2 industry plans and support tools (industry standards and testing laboratory) to promote EE related market/industry development by 2020.
Purpose/importance	Develop plans and tools that will accelerate industry development and market transformation towards the green economy.
Source/collection of data	Count of industry roadmaps, sector development plans and industry development/support tools, developed.
Method of calculation	Count outputs collated across all sub-programmes.
Data limitations	None.
Type of indicator	Measures outputs.
Calculation type	Cumulative.
Reporting cycle	Quarterly.
New indicator	New indicator.



Desired performance	Achieve at least the stated target or more.
Indicator Responsibility	Responsibility for sector inputs resides with the General Manager EE.

Indicator Title	<b>3.1.7 Hosted EE-related industry development events.</b>
Short Definition	Host at least 50 industry knowledge sharing events and platforms to promote energy-related market/industry development by 2020.
Purpose/importance	Host events and platforms that enable knowledge sharing and industry-wide collaboration that will accelerate industry development and market transformation towards the green economy.
Source/collection of data	Count of knowledge sharing events hosted.
Method of calculation	Count EE events hosted.
Data limitations	None.
Type of indicator	Measures outputs.
Calculation type	Cumulative.
Reporting cycle	Quarterly.
New indicator	New indicator.
Desired performance	Achieve at least the stated target or more.
Indicator Responsibility	Responsibility for sector inputs resides with the General Manager EE.

Indicator Title	<b>3.1.8 Number of recipients of energy-related training facilitated by SANEDI.</b>
Short Definition	Extend EE training facilitated by SANEDI to at least 200 recipients.
Purpose/importance	Stimulate and strengthen EE activity in the country by creating relevant awareness, skills and capacity.
Source/collection of data	Count of trainees attending SANEDI facilitated training. This may include interns hosted at SANEDI for on-the-job training, course and workshop attendees.
Method of calculation	Count records of attendees.
Data limitations	Documented and signed attendance registers.
Type of indicator	Measures outputs.
Calculation type	Cumulative.
Reporting cycle	Quarterly
New indicator	New indicator.
Desired performance	Achieve at least the stated target or more.
Indicator Responsibility	Responsibility for sector inputs resides with the General Manager EE.

Indicator Title	<b>3.1.9 Number of active researchers contributing to EE research leadership enabled by a SANEDI programme.</b>
Short Definition	Support for at least 60 fulltime energy research/studies through bursaries or non-bursary support.



Purpose/importance	Stimulate and strengthen energy skills development, research and innovation by enabling students and researchers in the EE sector.
Source/collection of data	Count of pre- or post-graduate students, research chairs, fellowships, or other supported/enabled by a SANEDI programme or bursary.
Method of calculation	Count outputs collated across all sub-programmes.
Data limitations	None.
Type of indicator	Measures outputs.
Calculation type	Cumulative.
Reporting cycle	Annual.
New indicator	New indicator.
Desired performance	Achieve at least the stated target or more.
Indicator Responsibility	Responsibility for sector inputs resides with the General Manager EE.