

FOREWORD

The Annual Performance Plan articulates SANEDI's targets for the 2016/17 financial year. The Annual Performance Plan corresponds directly with the SANEDI Strategic Plan, which in turn reflects the amended Department of Energy 5-year Strategic Plan, the Minister's KPIs and the relevant National political priorities.

SANEDI supports the national commitment to curtail the levels of government spending. The scope of initiatives and delivery commitments are therefore less comprehensive than our ambition would have it, but I believe it still presents an invaluable contribution to the energy industry as a whole.

I again encourage stakeholders and role players to embrace this plan, but also to engage with SANEDI to continue to refine and evolve SANEDI's contribution to be responsive to the most pressing energy challenges and priorities.

As executive authority, I commit SANEDI to executing the plan and delivering the goals and objectives as articulated.

MS RN MLONZI

Chairperson of the SANEDI Board
Executive Authority



OFFICIAL SIGN-OFF

It is hereby certified that this Annual Performance Plan was developed by the management of SANEDI under the guidance of the Department of Energy. It was prepared in line with the current Strategic Plan of SANEDI. It accurately reflects the performance targets which SANEDI will endeavor to achieve with its allocation for the 2016/17 financial year.

Ms Lethabo Manamela

Chief Financial Officer

Signature:

Ms Deshnee Govender

Head Official responsible for Planning

Signature:

Mr Kadri Nassiep

Accounting Officer

Signature:

Accounting Officer

MS RN MLONZI

Chairperson of the SANEDI Board

Executive Authority

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TABLE OF CONTENTS

1. EXECUTIVE SUMMARY
2. VISION
3. MISSION
4. VALUES
5. LEGISLATIVE AND OTHER MANDATES
6. SITUATIONAL ANALYSIS
 - 6.1. Performance environment
 - 6.2. Organisational environment
7. OVERVIEW OF THE 2016/17 BUDGET AND MTEF ESTIMATES
8. RELATING EXPENDITURE TRENDS TO STRATEGIC OUTCOMES
 - 8.1. Relating Programmes to Goals
9. PROGRAMME 1: CORPORATE GOVERNANCE AND ADMINISTRATION
10. PROGRAMME 2: ENERGY RESEARCH, DEVELOPMENT, DEMONSTRATION AND DEPLOYMENT PROGRAMME
 - 10.1. SUB- PROGRAMME 1: CLEANER FOSSIL FUELS (INCLUDING CARBON CAPTURE AND STORAGE): strategic objectives
 - 10.2. SUB- PROGRAMME 2: DATA REPOSITORY AND MANAGEMENT (CESAR): STRATEGIC OBJECTIVES
 - 10.3. SUB- PROGRAMME 3: SMART GRIDS and network automation: STRATEGIC OBJECTIVES
 - 10.4. SUB- PROGRAMME 4: RENEWABLE ENERGY: STRATEGIC OBJECTIVES
 - 10.5. SUB- PROGRAMME 5: WORKING FOR ENERGY: STRATEGIC OBJECTIVES
11. PROGRAMME 3: ENERGY EFFICIENCY: STRATEGIC OBJECTIVES
12. RISKS
13. PUBLIC-PRIVATE PARTNERSHIPS AND DONOR FUNDING
14. Appendix A: Policy Context
15. Appendix A: SANEDI Matrix Structure
 - 16.1. Advantages of the matrix structure
 - 16.2. Disadvantages of the matrix structure

1. EXECUTIVE SUMMARY

The SANEDI Strategic Plan defines the strategic purpose of SANEDI and sets out a compelling vision of the direction in which the Institute intends to go. It assists in establishing the priorities, identifies the long-term goals and identifies the best approach to achieve these goals.

SANEDI's mandate is derived from the authority and obligations set out in various government policies, legislation and constitutional requirements. These include, but are not limited to, the South African Constitution, the National Energy Act, Ministerial Directives, the White Paper on Energy Policy and the Industrial Policy Action Plan (IPAP).

Sustainable energy supply is a critical component in economic growth and development. However, the challenge of providing access to clean, reliable and affordable energy in support of socio-economic developmental needs, and addressing major environmental challenges including climate change, has proven to be problematic internationally. It is generally recognised that, in order to meet the intensifying climate challenge; the global (carbon intensive) energy system must undergo a fundamental transformation.

Many developed and fast-developing countries have already commenced with the transition to a low-carbon economy as a competitive and development priority, understanding that this will require far-reaching changes in technology, finance, policy and societal behaviour. Amidst the electricity crisis, South Africa finds itself at a critical juncture faced with urgent and important energy related decisions that will have a significant impact on its future.

Two key building blocks of sustainable energy solutions, and a low carbon economy, relate to energy innovation and energy conservation, which also describe the essence of SANEDI's composition and focus.

SANEDI has a critical role to play in ensuring that South Africa will have the necessary information and planning support (regarding, amongst others, emerging technologies, innovative practices, alternate energy solutions, advanced infrastructure, energy data) to plan for a sustainable and secure energy future that will also satisfy the country's economic, social and environmental needs.

SANEDI also has to influence/facilitate an immediate and critical change in the country's energy culture towards more considered and sustainable energy practices.

Within the overall Government planning context, SANEDI will primarily contribute to three of the national priority outcomes, referred to as the 'Change Agenda'. SANEDI will be the principal partner of the Department of Energy (DOE), in its effort to attain the energy policy objectives with particular focus on those that relate to (1) achieving macro-economically efficient production and rational use of energy, (2) stimulation of renewable energy sources and of innovative energy technologies and processes, and (3) related job creation and green industry development aligned with IPAP.

The implementation approach and activities of the Strategic Plan was developed around a comprehensive scope of activities to fulfil its mandate. Delivery of the full scope will require a significant investment, but will also offer significant short and long-term economic, environmental and social benefits resulting from a transition to a lower-carbon, less energy intensive economy.

SANEDI's programme activities and goals have been selected based on its alignment with the SANEDI focus areas described in the Business case, the outcomes that relate to the Minister of Energy's commitments (Key Performance Indicators) and the Department of Energy priority programmes as defined in the amended 2011/12 – 2015/16 5-year Strategic Plan.

The primary linkages between these programmes and commitments:

SANEDI Programme	Departmental Programmes (updated 5-year Strategic Plan 2011/12 – 2015/16)		Minister’s KPIs (Government Outcomes, 27 May 2011)	
	Programme 2: Energy Planning and Policy ¹	Programme 5: Clean Energy ²	OUTCOME 6 ³	OUTCOME 10 ⁴
Programme 1: Corporate Governance and Administration				
Programme 2: Energy Research, Development, Demonstration and Deployment	x	x	x	x
Programme 3: Energy Efficiency		x		x

The portfolio of programmes furthermore aligns with 6 of the 17 Strategic Integrated Projects as defined by the Presidential Infrastructure Co-ordinating Commission (PICC).

Due to the significant contribution of the energy sector towards South Africa’s high carbon emissions, SANEDI Programmes together with its sub – programmes were also considered in terms of the positive contribution it would make in reducing carbon intensity and advancing clean energy. SANEDI’s priority sub-programmes therefore also directly support the mitigation plans and approaches identified in the National Climate Change Response White Paper published October 2011.

The priority mitigation options, as identified in Section 6.3 of the Climate Change Response Plan, were defined as:

- Option 1:** Shifting to lower carbon generation options;
- Option 2:** Significant upscaling of energy efficiency applications;
- Option 3:** Promoting transport related interventions;
- Option 4:** Carbon capture and storage in the synthetics fuels industry;
- Option 5:** Mitigating non-energy emissions in agriculture and land use; and
- Option 6:** Transitioning society and economy to more sustainable consumption and production patterns

SANEDI is committed to delivering the goals and objectives described in this plan, subject to the availability of funding.

2. VISION

To be the leading clean energy solutions provider for a low carbon South Africa

3. MISSION

Accelerating the implementation of energy research and development, improving energy efficiency and increasing the uptake of renewable energy to the benefit of SA

4. VALUES

Innovation	Refers to new ideas, new ways of doing things or even a new application technology. An example of workplace innovation is the introduction of new procedures in the company, the introduction of different processes to improve work methods or the introduction of new technologies on the technical arena.
Accountability	Means being answerable for an action. Each staff member must take responsibility for their role and be accountable for their actions.
Transparency	It means frankness, openness, straightforwardness, brazenness, boldness. In the workplace, straight communications should be encouraged eg: leadership being transparent in the workplace has many benefits like problem- solving, healthy working relationships, trust and ultimately improved performance. Performance is always compromised when there is no transparency.
Batho Pele	Is a service delivery flagship for Government and means “People First” – putting people first before considering your own needs. The 8 principles are: consultation, service standards, access, courtesy, information, openness and transparency, redress and value for money.
Integrity /Honesty	Is the quality of being honest and sincere and having strong moral principles – thinking and doing what is right at all times. Honesty expresses self-respect and respect for others. Honesty lives with openness and reliability. Where there is dishonesty, there is no respect for oneself nor others. Dishonesty seeks shade and concealment.

5. 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 as well as undertake measures to promote energy efficiency throughout the economy.

6. SITUATIONAL ANALYSIS

Global factors affecting energy market in SA

- Volatility in oil price and uncertainty in medium-term trend
 - o Affects Sasol business sustainability
 - o Delay in establishment of shale gas market
 - o Delay in rapid roll-out of Plug in Hybrid Electric Vehicle technology
- International accord on greenhouse gases emission reduction
 - o Paris Agreement under UNFCCC (December 2015) creates a platform for emission reduction projects
 - o INDCs are voluntary in terms of implementation but mandatory in terms of submission
 - o Growing pressure on rapidly emerging economies to embrace binding targets
 - o South Africa's commitment to reducing greenhouse gas emissions
- Growing Renewable Energy Market
 - o Some renewables have reached grid parity with grid-based fossil fueled power generation
 - o SA remains a favored destination for RE technologies due to climate, market conditions, demand and local content / support
 - o import quality and quantity of RE products and value-added services entering SA market
- International investor confidence in SA economy
 - o Decline in credit rating (Moody's, Standard & Poor) for both Eskom and sovereign credit-worthiness
 - o Weaker exchange rate promotes exports but raises PPI and CPI/X – detrimental net impact on economy as balance of payments influenced more by oil imports than mineral / metal commodity sales
- International targets for Energy Access
 - o Sustainable Development Goal 7 of SE4ALL (UN)
- Local factors affecting energy market in SA
 - o Policy signals to market
 - REIPPP Programme linked to well-publicised IRP plan
 - IEP2, NDP largely ignored at present – IRP 2010 requires revision
 - Energy White Paper, RE White Paper, EE Strategy require updating
 - Climate Change Response Strategy will guide response measures to climate change
 - Nuclear Build will complement additional cleaner fossil fuel-based and renewable energy power generation
 - o State of economy and projected trends
 - Slower growth with possible stagflation over 5-year horizon
 - Growing unemployment with reduced investment in large infrastructure projects and local manufacturing,
 - Decline in municipal and utility revenue – lower sales due to growing trend in customers switching to own production and consumption, poor revenue collection, poor metering and asset management
 - o Energy Access in SA
 - About 86% of SA has grid-based electricity – remaining 14% are targets for off-grid and distributed generation.

6.1. PERFORMANCE ENVIRONMENT

A PESTLE¹ analysis framework was used as a basis for a comprehensive environmental analysis for SANEDI. A brief overview of the most pertinent considerations is highlighted here to contextualise the SANEDI Strategic plan.

As it takes its cue from Government priorities and policy direction, SANEDI is vulnerable to an ambiguous policy, legislative and regulatory environment. Several aspects of SANEDI's operation are dependent on the resolution of legislative and policy decisions. Most notably is the importance of reconciliation between energy, economic development and environmental policy and resolution with respect to the anticipated Department of Energy, Energy Technology Innovation Policy.

Low electricity prices have historically been a key inhibitor for energy efficiency and contributed to a wasteful energy culture in South Africa. Rising electricity, energy and fuel prices coupled with policy signals and disincentives should however, prompt a shift towards more considered energy selection and consumption. International experience has shown that the real impact of price on consumer behaviour and choice of equipment and activities will only materialise over time. The expected delay of the impact of price elasticity should therefore be mitigated by complementary initiatives such as awareness creation, communication and education.

The global recession has negatively impacted economic activity and therefore energy related investment. Initial expectations were for full economic recovery during 2010, but the rate of recovery has been slower than anticipated with current expectations of a second slump. Delayed economic recovery is likely to curtail research and innovation investments globally. It may also increase the relative importance of short-term financial considerations in energy technology / solution selection, hence perpetuating old, carbon intensive options.

Unemployment in South Africa is high and job creation the top priority of Government. The availability of energy and electricity is a major component of economic stability and growth and therefore the economy's ability to absorb employment and preserve existing jobs. The 'green industry' offers significant opportunity to bolster the South African Government's ability to address unemployment and grow economic activity.

Independent reviews² revealed chronic shortages of higher skills and underinvestment in research and development in the country. South Africa has in recent years seen a marked decline in national energy research capacity and investment with a significant share of previously available funding being diverted to more pressing operational priorities.

With consideration of the link between energy research and development and global competitiveness, this situation requires due attention and correcting for South Africa to support the level of innovation and technological adaptation that is aligned with the existing and growing, socioeconomic and sustainability challenges.

The benefits associated with research and technology innovation extend far beyond the obvious to include:

Dimension	Public benefits of research and technology innovation	
Techno-economic	Improvement of industrial competitiveness	National economic growth
	Reduction of the energy intensity of the national economy	SME development (e.g. ESCO, Certification entities, component manufacturing)
	Technological and service exports	Economic efficiency

1 Political, Economic, Socio-cultural, Technology, Legislative, Environmental.

2 National Advisory Council on Innovation, South African Science and Technology Indicators, 2009; The OECD's Review of South Africa's Innovation Policy, 2007; National Survey of R&D activities, undertaken by the Centre for Science, Technology and Innovation Indicators (CeSTII) of the Human Sciences Research Council (HSRC).

Dimension	Public benefits of research and technology innovation	
Environmental	Optimal use of renewable resources	Biodiversity
	Greenhouse gas emissions and climate change	Sustainable development
	Air quality	
Social	Access to energy	Reduce price to consumers
	Employment creation	Empower consumers
	Equity issues related to energy	
Strategic	System reliability, loss reduction, quality of energy	Security of energy supply
	Regional development	Improve the technological services balance of trade
	Domestic technology capacity building	Create industrial base for energy technology
	Diversification of energy mix	

6.2. ORGANISATIONAL ENVIRONMENT

SANEDI is an implementation agency of Government, specifically the Department of Energy, created for the sole purpose of assisting the State to achieve its strategic objectives as set out in the National Energy Act, 2008 (No. 34 of 2008). Such strategic objectives include:

- Ensure uninterrupted supply of energy to the Republic;
- Promote diversity of supply of energy and its sources;
- Facilitate effective management of energy demand and its conservation;
- Promote energy research;
- Promote appropriate standards and specifications for the equipment, systems and processes used for producing, supplying and consuming energy;
- Ensure collection of data and information relating to energy supply, transportation and demand;
- Provide for optimal supply, transformation, transportation, storage and demand energy that are planned, organised and implemented in accordance with a balanced consideration of security of supply, economics, consumer protection and a sustainable development;
- Provide for certain safety, health and environment matters that pertain to energy;
- Facilitate energy access for improvement of quality of life of the people the Republic;
- Commercialise energy-related technologies;
- Ensure effective planning of energy supply, transportation and consumption; and
- Contribute to sustainable development of the South African economy.

SANEDI will furthermore support the local renewable energy and Energy Efficiency and Demand Side Management (EEDSM) industries in South Africa in accordance with the Industrial Production Action Policy (IPAP) and, indirectly, also the climate change and mitigation, social and economic development and environmental sustainability priorities of the country.

As indicated earlier two key building blocks of sustainable energy solutions relate to energy innovation and energy conservation/efficiency. This is reflected in the high level organisational structure (Figure 1).

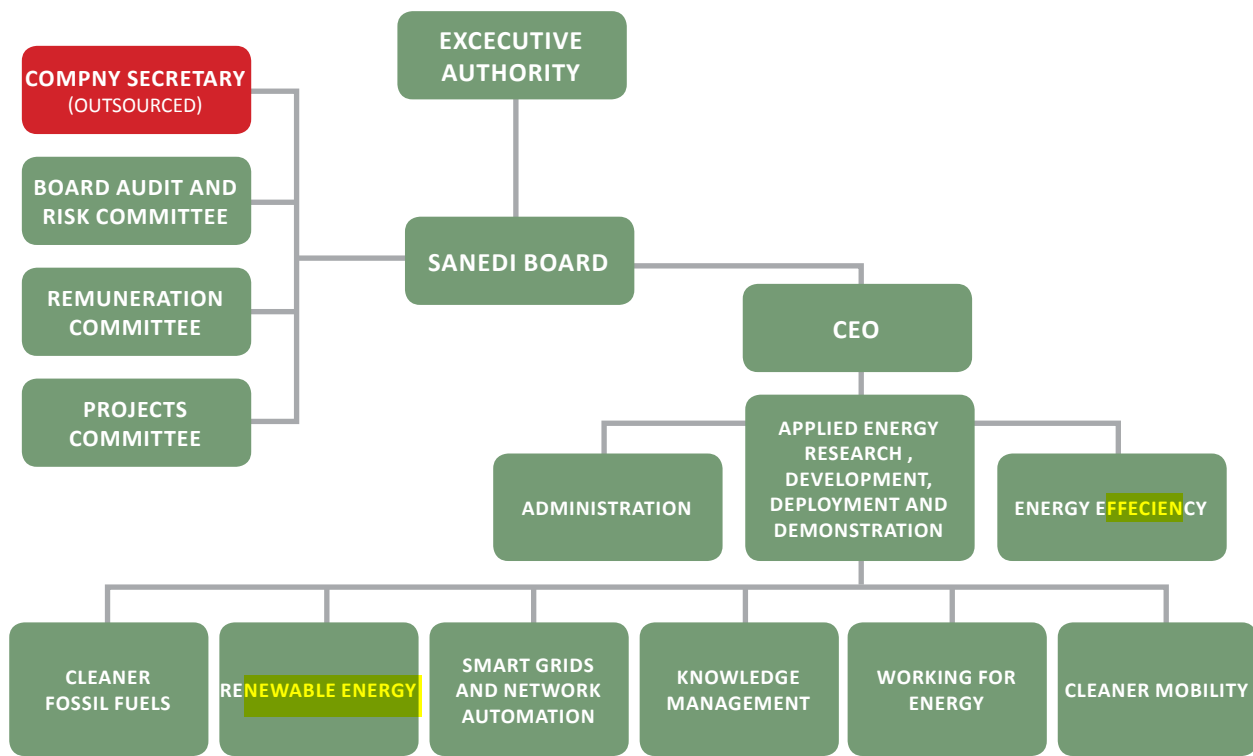


Figure 1: SANEDI Organisational structure

In South Africa’s existing research and innovation context, SANEDI’s focus will be primarily on energy research, development, demonstration and deployment. Select activities of SANEDI Energy Efficiency and the Working for Energy Programme will also promote technology deployment, i.e. market entry and penetration of new clean energy and energy efficiency solutions.

SANEDI operating structure is a matrix one. Effectively this structure establishes a pool of people that 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. The complete view of all relevant areas and the matrix management model as it applies to SANEDI is attached as Appendix B.

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. Currently, most of SANEDI’s staff are on contract.

The implementing model that SANEDI has chosen also relies on the establishment of Centers of Research and Development (CORDs). These centers, either located within SANEDI or externally, will rely on human capital to provide for key services. It is the objective of SANEDI to leverage additional funds, from sources such as donors, DFIs, NRF, SETAs, 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 model, 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.

7. OVERVIEW OF THE 2016/17 BUDGET AND MTEF ESTIMATES

	2014/15		2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
	Budget	Preliminary outcome	Approved budget	Budget estimate	Budget estimate	Budget estimate	Budget estimate	Budget estimate
	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000
Administration	17,110	53,480	68,952	55,807	57,896	55,552	58,607.36	61,830.76
Energy efficiency programme	24,083	9,058	2,000	2,000	-	3,000	3,165.00	3,339.08
Energy Research, Development, Demonstration and Deployment programme:								
SACCCS/PCSP	182,762	8,442	139,213	119,650	129,850	180,000	266,000	68,000
Smart grids	-	28,826	93,800	-	-	500	527.50	556.51
Working for energy	-	2,211	20,075	-	-	3,000	3,165.00	3,339.08
Clean energy solutions	-	9,283	70,741	2,838	3,508	1,189	1,254.40	1,323.39
Centre for Energy systems Analysis and Research	-	1,234	2,000	3,000	1,227	-	3,000.00	3,165.00
Green transport	-	-	-	-	-	-	1,000.00	1,055.00
Shale gas	-	817	6,769	-	-	-	-	-
Total	223,95	113,351	403,550	191,245	73,789	144,183	470,719.26	496,608.81
Current payments	223,955	86,801	301,074	191,245	73,789	144,183	152,113.07	160,479.28
Compensation of employees	43,800	39,688	45,711	48,911	52,335	56,548	59,658.14	62,939.34
Salaries and wages	43,800	39,688	45,711	48,911	52,335	56,548	59,658.14	62,939.34
Social contributions	-	-	-	-	-	-	-	-
Goods and services	179,225	42,267	251,615	136,727	19,065	86,202	90,943.11	95,944.98
Of which 1							-	-
Agency and support/outsourced services	1,680	1,857	2,991	1,482	1,452	1,524	1,607.82	1,696.25
Communication	-	-	-	1,391	-	-	-	-
Computer services	-	-	-	-	-	-	-	-
Consultants	1,515	228	1,152	1,514	266	280	295.40	311.65
Contractors	-	-	-	-	-	-	-	-
Inventory	-	-	-	-	-	-	-	-
Lease payments	3,762	3,251	4,726	5,136	5,434	5,992	6,321.56	6,669.25
Repairs and maintenance	531	342	172	158	32	34	35.87	37.84
Research and development	152,430	20,527	231,420	118,022	6,284	72,703	76,701.67	80,920.26
Training and staff development	300	498	450	800	516	136	143.48	151.37
Travel and subsistence	5,561	5,874	6,695	3,744	1,573	3,292	3,473.06	3,664.08

	2014/15		2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
	Budget	Preliminary outcome	Approved budget	Budget estimate	Budget estimate	Budget estimate	Budget estimate	Budget estimate
	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000
Other	13,446	9,690	4,008	4,480	3,508	2,243	2,366.37	2,496.52
Depreciation	930	4,846	3,748	5,607	2,389	1,433	1,511.82	1,594.96
Transfers and subsidies	-	26,550	87,000	-	-	-	-	-
Other government units	-	26,550	87,000	-	-	-	-	-
Municipalities	-	26,550	87,000	-	-	-	-	-
Tax payment	-	-	15,476	-	-	-	-	-
Total Expenditure	223,955	113,351	403,550	191,245	73,789	144,183	622,832.32	657,088.10

ADMINISTRATIVE BUDGET

The budget allocation under this programme is aimed at enabling administrative divisions within the organization to continue to support the core divisions in the delivery and execution of the organisational mandate and the execution of the approved Strategy.

Over the 2016/17 MTEF, the administration budget linked to programme 1 will amount to R55, 807 million being a reduction of 24% from the previous period (2015/16) as a result of increased efforts to contain costs stemming from fiscal budget cuts and some of strategic positions not being filled i.e. Procurement Manager and Company Secretary . Expenditure on goods and services linked to administrative function will amount to R18, 044 million of the overall expenditure budget as we direct more efforts towards spending on applied energy research, development, demonstration and deployment as well as energy efficiency programmes..

There will be an increased focus on training and development of staff in order to ensure high calibre of staff and innovation within the organization. The training and development budget will increase by 78% from the previous financial year as SANEDI positions itself to be the leaders in energy innovation and development. Expenditure on consultants/contractors will increase by 36% as we continue with the establishment of a fully capacitated Human Resources department to ensure that the organization has a motivated and fully functional workforce.

Investments in IT infrastructure will continue during the period as the entity capacitates the Project Management Office with resources required to ensure efficiency in project design, implementation, evaluation and reporting. It is expected that an investment of R1 million will be made in improving the performance management module. This will, however, be tackled using a phased in approach.

Expenditure relating to compensation of employees will amount to R34 032 million with an estimated total staff complement of 61 employees. This is an increase of 7% in comparison to the previous year's projections for cost of living adjustments to remuneration.

Research, development, demonstration and deployment initiatives linked to programme 2 and 3 will amount to 57% of the overall expenditure budget with expenditure being spread as follows:

8. RELATING EXPENDITURE TRENDS TO STRATEGIC OUTCOMES

		Estimated Budget 2015/16 R'000	Estimated Budget 2016/17 R'000
Energy efficiency programme		2,000	2,000
Energy Research, Development, Demonstration and Deployment programme:			
Cleaner Fossil Fuels (CCS)	1	139,213	127,600
Smart Grids and Network Automation	2	93,800	-
Working for Energy	3	20,075	-
Renewable Energy	4	70,741	2,838
Data Repository and Management	5	2,000	3,000
Cleaner Mobility	6	-	-
Cleaner Fossil Fuels (Shale gas)	7	6,769	-
Total		334,598	135,438

CLEANER FOSSIL FUELS (CARBON CAPTURE AND STORAGE)

The national development plan envisages a move towards a lower carbon intensive electricity production in the long term and greater demand side measures. The main aim of the South African National Energy Development Institute is to undertake measures to promote the development of a low carbon economy in South Africa. The focus of the institute over the medium term will be to conduct research and development related to the carbon capture utilization and storage, in particular the pilot carbon dioxide storage project. Technology used in the carbon capture and storage pilot project has the potential to take carbon dioxide from large emission sources, such as fossil fuel power plants, synfuel plants and industrial facilities, and safely store it in deep geological formations to avoid emitting it into the atmosphere, thereby mitigating climate change. The pilot project aims to demonstrate the potential viability of carbon dioxide storage in South African conditions, including in South African geology. Based on the outcomes of previous studies, 2 basins have been identified as options for the pilot project. The project is supported by an allocation of R172 million from the Department of Energy received during the preceding years and a further US\$27.4 million from the World Bank to be received during 2016 and following years. Below please find an overview of the main components of the project and an estimate of the costs.

Project Components	Project Cost (USD)	IBRD or IDA Financing (USD)	% Financing
1. Pilot CO₂ Storage Project	50 million ³	3 million	51%
a. Data Analysis and Project Planning	8.9 million	3.4 million	38%
b. Basin Exploration and Site Selection	18.5 million	17 million	92%
c. Schematic Engineering Design	1.5 million	0.5 million	33%
d. Detailed Engineering Design	2 million	1 million	50%
e. Procurement and Construction	13 million	1.4 million	11%
f. Operation	4 million	2 million	50%
g. Closure	1.5 million	-	0%
h. Post-Closure	0.6 million	-	0%
2. CO₂ Capture Pilot Project	10 million ⁴	2 million	20%
a. Prefeasibility and FEED Studies	2.0 million	2.0 million	100%
b. Plant Procurement, Construction and Operation	8.0 million		0%
3. Assistance with Legal and Regulatory Framework Development	0.1 million	0.1 million	100%
Total Costs	60.1 million⁵	27.4 million	46%

To date R15 million has been spent on the project and an additional R 33 million income raised from private sector partners and international donors in support of the programme. Progress to date (2015/16) to date includes:

1. Pilot Monitoring Project Phase I completed at Bongwana natural carbon dioxide releases;
2. Geological data inventory commenced
3. Exploration permit applied
4. Exploration plan development initiated
5. Environment and Social Impact Assessment completed and sent to World Bank
6. World Bank appointment of Pilot Carbon Dioxide Storage Project Technical Advisor has been shortlisted with SANEDI inputs and full proposals/quotations deadline 14Jan2015
7. SANEDI recipient appraisal by the World Bank completed.
8. Stakeholder engagement programme exceeded number of target interactions with thus far positive results
9. Completion of the Fourth Biennial Carbon Capture and Storage Conference that included explicitly for the first time affected persons at the local level
10. Appointment of three new specialist staff
11. Seven student bursars
12. Carbon Capture Pilot Plant ESIA documentation drafted for World Bank

3 Currently USD 39.9 million of funding has been secured for the PCSP, therefore there currently exists a funding gap of USD 10.1 million.

4 Currently USD 2 million of funding has been secured for the CCPP, therefore there currently exists a funding gap of USD 8 million.

5 Currently USD 42 million of funding has been secured, therefore there currently exists a funding gap of USD 18.1 million

SMART GRIDS AND NETWORK AUTOMATION (SMART GRIDS)

The European Union (EU) made available seed funding of R179.4 million to National Treasury over a two year period which was intended to accelerate South Africa's journey towards achieving a smarter grid. This programme was formally initiated in September 2014 with the revised end date being June 2016. The Smart Grid Maturity Model (SGMM) survey and the Smart Grid through Smart meters will allow users to monitor and manage usage and can address challenges in municipalities' capabilities for managing their electricity revenue.

The Department of Energy has identified five areas within the Electricity Distribution Industry that they would like to have policy and regulatory input from. These five areas have resulted in the selection by the DoE of 9 municipalities to participate in projects that both address burning issues within the municipality and also addresses the DoE priorities.

The **five 5** priorities of the Department are as follows;

- Distributed Power Generation
- Enhanced revenue management
- Energy Efficiency Demand Side Management (EEDSM)
- Active Network Management
- Asset Management

These objectives listed above are thereafter structured into projects and deliverables by SANEDI, acting in a technical capacity to the department. At present:

- **DoE IPP Project** - This project was allocated R5million which is at the DoE to reallocate the budget to other areas of the programme.
- **City Power (Advanced Metering Infrastructure Project)** - This project is in the 4th phase of the 7 phases and on track with an allocation R10million.
- **Revenue Enhancement Projects (5 municipalities)** - Individual municipalities are at various stages of completion of the project. The collective allocation is R77m and R 33 million has been spent to date on these municipalities,

Depending on the stage of implementation at the end of the financial year, a proposal for phase two will be submitted to National Treasury for funding. This will take place during the 2016/17 financial year and thus no budget estimates have been provided as the funding still need to be secured.

DATA REPOSITORY AND MANAGEMENT

Centre for Energy System Analysis & Research (CESAR)

The DST has made available to SANEDI an amount of R6 million for the 2014-17 period with the following objectives:

- To develop technical know-how, knowledge, and human capacity in energy modelling and planning
- To collect and maintain an open central database of energy research and related data
- To research and develop suitable models for the South African energy system
- To provide research support and advice on government initiatives regarding energy data collection, energy modelling and planning
- To collaborate with international bodies regarding research on energy data, energy modelling, planning and policy development

- To develop the necessary skills and resources to support the following
 - o Energy modelling
 - o Planning
 - o Analysis
 - o Energy Technology innovation
- Contribute towards the development of a centralised energy planning database which is up to date and can support the requirements of multiple government institutions (national and local).

RENEWABLE ENERGY

To date 5 Projects have been contracted by SANEDI in support of the Danish RE EE Program focusing on strengthening the energy planning capabilities of DoE in the areas of Climate Change Mitigation, Energy Efficiency and Renewable Energy and to strengthen the capacity of Eskom for integration of renewable energy in the electricity supply. Several more projects are being finalised, including support for SARETEC (training materials, bursaries etc.) while under WASA Phase 2 an additional 5 wind measurement masts have been installed and are operational in the expansion of WASA to include an interim Wind Atlas and Resource map for KZN, Free State and remaining areas of the Eastern Cape provinces by 2017.

An amount of DDK25, 525 has been made available for this project through the RDP fund.

WORKING FOR ENERGY

The Working for Energy (WfE) Programme, under the Environment and Culture Sector of the Expanded Public Works Programme (EPWP) is spreading its reach to more and more communities across the country. It is focused on delivering clean energy solutions to rural and urban low income communities through labour intensive methods where possible, with special emphasis on youth, women and people with disabilities.

This sub-programme was funded through an allocation from the Department of Energy amounting to R45 million in 2009 to 2012. An amount of R26 million has been spent on the project on several demonstration projects over the previous mid-term Cycles. In the reporting cycle the following progress is reported:

- The Institute's partnership with the Gauteng Department of Education has resulted in four schools being retrofitted with energy efficient LEDs, solar water heaters and 2 being treated with Cool Surfaces preparation to improve the ambient air quality. Anaerobic digesters will be completed by the end of the financial year.
- Together with the Department of Energy, about 100 schools have been identified for the smart meter installation programme.

The above programme will be expanded to other schools, clinics and places of care in various provinces in the next MTEF.

- The Institute's partnership with the National Development Agency (NDA) has resulted in the Working for Energy Programme being launched by the Ministry at one of the fully greened Early Childhood Development Centre (ECDC) in Hammanskraal. These interventions entail cool surfaces, efficient lighting, rain water harvesting, solar water heating and biogas from waste.

- There are other similar initiatives in ECDCs in Kwa Maphumulo and Kwa Ximba (KZN) and some in the Alice / Melani in the Eastern Cape that have been completed.

The above programme will be expanded to other ECDCs in various provinces in the next MTEF.

- The biogas programme in Melani in partnership with the universities of Fort Hare and Unisa is progressing well with all the institutional arrangements being completed to roll out the balance of the 110 digesters in the greater Melani area.
- The biogas programme in Mpfuneko is at a stage of operationalising the completed digesters.
- Partnership agreement with the University of Venda is being finalised for the research and roll out of greening projects in the Limpopo province.
- The greening of the Dinaledi School of Tygerkloof in Vryburg, (North West) is underway with commencement of the hard water purification system as a necessary precondition for the installation of solar water heaters to the dormitories of the school.

The above programme will be expanded to other boarding schools in various provinces in the next MTEF. It will include other greening technologies such as biogas and rainwater harvesting systems and cool surfaces interventions. The future is to intensify these interventions and add other concomitant technologies, which brings about skills development, job creation and enterprise development among the youth, women and people with disabilities. It is also important to note the need for the maintenance and operation of these interventions once deployed for sustainability.

The biggest impediment of organic growth is the lack of sustainable funding for posterity. We have submitted a bid for R100 million for the expansion of the working for energy programme for the MTEF period which is under augmentation.

CLEANER FOSSIL FUELS (SHALE GAS)

A feasibility study into the potential for exploiting shale gas in the Karoo is currently under way. Expenditure on this project was R1.6 million at the end of March 2015. The project focuses on the technical aspects of shale gas exploitation and utilisation by developing scenarios to help quantify requirements such as the number of boreholes, water and pipeline infrastructure, waste water issues and the potential for electricity generation and the reduction of carbon dioxide emissions.

Overall the project is expected to cost in the region of R 8 million (already received from Department of Energy) and will be completed during the 2015/16 financial year at an estimated expenditure of R6.8 million in 2015/16.

ENERGY EFFICIENCY

Funded through DST funding and DoE allocation the main purpose of Energy Efficiency and Demand Side Management Hub is

- to lead EEDSM fundamental and applied research and development activities in South Africa;
- to produce state-of-the-art fundamental and applied research and innovation results;
- to promote demonstration and commercialisation of applied research and development;
- to seek market uptake and diffusion of EEDSM technologies;

- to integrate and transfer knowledge to better understand challenges and identify needs in EE, technology and sustainability;
- to facilitate development of products that adopt new EEDSM technologies, development of prototype projects that can be used to test and validate new technologies, and patent relevant technologies and products in the EEDSM field; and
- to provide EEDSM related services (training, technical support, consultation, measurement and verification, etc.) to governments, organisations and industries.

During the Medium term ended 31 March 2015, R11, 2 million was spent towards this programme. In the 2014/15 financial support was granted to 23 Students through this funding. Six (6) of the students being female and 17 being Previously Disadvantaged Individuals.

It is expected that over the next cycle an additional amount of R6 million would be expanded on this project.

8.1. RELATING PROGRAMMES TO GOALS

Programme and corresponding budget programme	Programme purpose	Goals
Corporate Governance and Administration	To provide strategic support and management services to SANEDI's shareholder (particularly the Energy Ministry and the Department), SANEDI's Board, SANEDI's most valuable assets (its people), and to all relevant stakeholders. And to ensure compliance with all statutory requirements in line with sound corporate governance practices.	Establish sound relationships between SANEDI's management, Board, its shareholder: the Department of Energy and the goals for which SANEDI is governed. Establish a platform for accountability, sound governance, control and administration in compliance with all legal and regulatory requirements. Manage the administration of funds and ensuring economic efficiency. Manage and establishing adequate and efficient infrastructure and business support. Facilitate strong collaborative approach and strategic international collaboration.
Energy Research, Development, Demonstration and Deployment	Knowledge creation and development that can support informed energy-related planning and decision-making. The applied research programme is therefore primarily focused on developing a portfolio of confirmed viable (cost effective and low risk) and sustainable energy solutions- aligned with Government goals of energy security, energy sector transformation and diversification, economic development and environmental protection- that can confidently be incorporated into national plans and policy processes.	Energy knowledge creation (R&D): Portfolio of viable cleaner energy options. Intelligent energy systems infrastructure. Pursue strong collaborative approach and strategic international collaboration. Demonstrate cleaner energy technology opportunities.

Programme and corresponding budget programme	Programme purpose	Goals
Energy Efficiency Programme	Accelerate a move towards a resource and particularly, an energy (including gas, liquid fuels, electricity and water) efficient society.	<p>To support the Income Tax Amendment Act section 12I and 12L relating to the tax rebate for energy efficiency improvements.</p> <p>EEDSM Hub (Research Centre), to strengthen energy efficiency related research, human capacity development and market transformation and enterprise development initiatives.</p> <p>Industry support and Capacity Building, to support various energy efficiency related activities that contribute positively to the accelerated uptake of energy efficiency in South Africa.</p> <p>National Champion 18 for Energy Efficiency, to effect a change in human behavior and energy consumption patterns, thereby contributing to the achievement of the targets prescribed in the National Energy Efficiency Strategy.</p> <p>National Measurement and Verification Centre to independently, accurately and consistently integrate and report on (bottom-up) progress with all energy efficiency activities across all energy carriers in the country and to cross-reference to (top-down), sectoral reporting results.</p>

9. PROGRAMME 1: CORPORATE GOVERNANCE AND ADMINISTRATION

PURPOSE

The purpose of this programme is to provide strategic support and management services to SANEDI's shareholder (particularly the Energy Ministry and the Department), SANEDI's Board, SANEDI's most valuable assets (its people), and to all relevant stakeholders. The purpose is furthermore in doing so to ensure compliance with all statutory requirements in line with sound corporate governance practices.

SUB-PROGRAMMES WITHIN CORPORATE GOVERNANCE AND ADMINISTRATION

The following sub programmes have been identified and are the responsibility of the indicated components:

Sub-programmes	Components
Corporate Governance.	<ul style="list-style-type: none"> • CEO • Manager : Corporate Planning /Office of the CEO • CFO • Company Secretary (Acorim)
Finance	<ul style="list-style-type: none"> • CFO / Financial Manager
Human Resources	<ul style="list-style-type: none"> • CEO • Manager : HR
Corporate and Programme Marketing and Communication Services	<ul style="list-style-type: none"> • CEO • Senior Manager: Communications

SUB-PROGRAMME: CORPORATE GOVERNANCE

ID	Strategic Objective (output)	Strategic statement	Baseline
1.1	Compliance with Department of Energy's compliance calendar in respect of strategic plans, annual performance plans, annual reports and quarterly reports for state entities reporting to the Department	Ensure compliance with the Department of Energy's compliance calendar in respect of strategic plans, annual performance plans , annual reports and quarterly reports for state entities reporting to the Department	Quarterly reports, strategic plans, annual performance plans and annual reports sent as per compliance calendar

SUB-PROGRAMME: CORPORATE GOVERNANCE

ID	Strategic Objective (output)	Strategic statement	Baseline
1.2	Effective Financial processes, systems and Procedures.	Ensure that 97% of all creditors are paid within 30 days after relevant documents are received.	97% of all creditors paid within 30 Days after all relevant documents are received.

SUB-PROGRAMME: HR

ID	Strategic Objective (output)	Strategic statement	Baseline
1.3	Highly motivated team of employees who are managed according to best practice thereby contributing optimally to the achievement of organisational goals.	SANEDI needs to have its own HR policies and procedures which will ensure that employees are managed equally and according to best practice so that each employee makes a valuable contribution to the achievement of organisational objectives	Approved policies

SUB-PROGRAMME: CORPORATE PROGRAMME MARKETING AND COMMUNICATION SERVICES

ID	Strategic Objective (output)	Strategic statement	Baseline
1.4	Corporate and Programme Marketing and Communications	Provide corporate and programme marketing and communication services that will adequately support the promotion and knowledge sharing SANEDI activities both internally and externally. Ensure that the stakeholder engagement plan is place and is being implemented	Draft corporate and programme marketing and communication plan Draft stakeholder engagement plan

CORPORATE GOVERNANCE AND ADMINISTRATION: STRATEGIC OBJECTIVES AND ANNUAL TARGETS

Strategic Objective (output)	Performance indicator	Audited Actual Performance 2014/15	Estimated performance (2015/16)	Medium Term Targets		
				2016/17	2017/18	2018/19
1.1	<p>Compliance with Department of Energy's compliance calendar in respect of strategic plans, annual performance plans, annual reports and quarterly reports for state entities reporting to the Department</p> <p>Timely submitted Strategic plans to the Executive Authority</p> <p>Timely submitted annual performance plans to the Executive Authority.</p> <p>Timely submitted annual report to the Executive Authority.</p> <p>Timely submitted quarterly reports to the Executive Authority.</p>	<p>Strategic plan submitted as per the corporate plan</p> <p>Annual performance plan submitted as per the corporate calendar</p> <p>Annual report submitted as per the corporate calendar</p> <p>Quarterly reports submitted as per the compliance calendar</p>	<p>Compliance in terms of Department of Energy's compliance calendar in respect of strategic plans, annual performance plans, annual reports and quarterly reports for state entities reporting to the Department of Energy.</p>	<p>Compliance in terms of Department of Energy's compliance calendar in respect of strategic plans, annual performance plans, annual reports and quarterly reports for state entities reporting to the Department of Energy.</p>	<p>Compliance in terms of Department of Energy's compliance calendar in respect of strategic plans, annual performance plans, annual reports and quarterly reports for state entities reporting to the Department of Energy.</p>	
1.2	<p>% of creditors paid within 30 days after all relevant documentation have been received.</p>	<p>100% of creditors were paid within 30 days after all relevant documentation were received</p>	<p>97% of all creditors paid within 30 days after all relevant documentation have been received.</p>	<p>97% of all creditors paid within 30 days after all relevant documentation have been received.</p>	<p>97% of all creditors paid within 30 days after all relevant documentation have been received.</p>	
1.3	<p>Number of HR policies approved by board.</p>	<p>New objective</p>	<p>Development of the 5 basic HR policies which will help develop a culture to address accountability and leadership gaps:</p> <p>Conditions of service, Code of conduct , Performance Management policy, Rewards Philosophy</p> <p>Short term incentive policy</p>	<p>Development of all other HR policies which will help develop a culture to address accountability and leadership gaps.</p>	<p>Drive a high performance culture with an innovative mindset and distinctive capabilities to accelerate growth and encourage innovation with a clear link to reward and recognition</p>	<p>Attract and retain talent for sustainable growth and competitive advantage providing value added HR interventions designed to brand SANEDI as an employer of choice</p>

Strategic Objective (output)	Performance indicator	Audited Actual Performance 2014/15	Estimated performance (2015/16)	Medium Term Targets		
				2016/17	2017/18	2018/19
1.4	A stakeholder engagement plan and an implementation plan in place and implemented	New indicator	Draft Stakeholder engagement plan in place.	An effective and comprehensive stakeholder plan and 60% positive feedback	On- going stakeholder engagement achieving 60% positive feedback	At least 60% positive feedback from Stakeholders.
1. Effective and comprehensive stakeholder management, achieving 60% positive feedback by end of 2016/17.	At least 4 exhibitions per annum, 80% attendance of DOE events, monthly updated website and distribution of quarterly newsletters as per distribution list and channels.	Monthly newsletters were not compiled. 4 quarterly newsletters were compiled 6 Communicators forum meetings were attended and reports presented Annual report contribution in terms of editorial and design were given 4 DoE official events were attended	At least 4 exhibitions, 80% attendance of DOE Communicators forum, updated website and 3 quarterly newsletters compiled and distributed.	4 Exhibitions per annum, monthly updated website and 4 quarterly newsletters compiled and distributed.	4 Exhibitions per annum, monthly updated website and 4 quarterly newsletters compiled and distributed.	

CORPORATE GOVERNANCE AND ADMINISTRATION: STRATEGIC OBJECTIVES AND QUARTERLY TARGETS

Strategic Objective	Activity Performance indicator	Reporting Frequency	Annual Targets 2016/17	Quarterly targets			
				1st	2nd	3rd	4th
1.1	To comply with the Department of Energy's compliance calendar in respect of strategic plans, annual performance plans , annual reports and quarterly reports for state entities reporting to the Department	Annually	Compliance in terms of Department of Energy's compliance calendar in respect of strategic plans, annual performance plans , annual reports and quarterly reports for state entities reporting to the Department of Energy	Host strategic planning session by 30/06/16	Draft 1 of strategic plan submitted to DoE 31/08/16	Draft 2 of the strategic plan submitted to DoE 30/11/16	Final strategic plan submitted to DoE 31/01/17
	Timely submitted Strategic plans to the Executive Authority	Annually		Host strategic planning session by 30/06/16	Draft 1 of the annual performance plan submitted to DoE 31/08/16	Draft 2 of the annual performance plan submitted to DoE 30/11/16	Final annual performance plan submitted to DoE 31/01/17
	Timely submitted annual performance plans to the Executive Authority	Annually		Completed Annual Report with draft financials by 30/06/16	Annual Report submitted to the DoE on 31/08/16	Presented to Parliament	-
	Timely submitted quarterly reports to the Executive Authority	Annually		4th report submitted to DoE 30/04/16.	1st report submitted to DoE 31/07/16.	2nd report submitted to DoE 31/10/16.	3rd report submitted to DoE 31/01/17.
1.2	To have effective payments systems in place ensuring timely settlement of trade creditors.	Quarterly	97% of all creditors paid within 30 days after all relevant documentation have been received by the Finance Department.	97% of all creditors paid within 30 days after all relevant documentation have been received by the Finance Department.	97% of all creditors paid within 30 days after all relevant documentation have been received by the Finance Department.	97% of all creditors paid within 30 days after all relevant documentation have been received by the Finance Department.	97% of all creditors paid within 30 days after all relevant documentation have been received by the Finance Department.
1.3	To have a highly motivated team of employees who are managed according to "best practice" thereby contributing optimally to the achievement of the organisational goals	Quarterly	Development of all other HR policies which will help develop a culture to address accountability and leadership gaps	70% of employees trained on policies	70% of employees accessing the wellness programme interventions	70% of employees trained on the Performance Management Framework and system	6 employees to be developed in terms of the leadership pipelines development plans

Strategic Objective	Activity Performance indicator	Reporting Frequency	Annual Targets 2016/17	Quarterly targets			
				1st	2nd	3rd	4th
1.4	1. Effective and comprehensive stakeholder management, achieving 60% positive feedback by end of 2016/17. A board approved stakeholder engagement plan and an implementation plan in place and implemented	Quarterly	An effective and comprehensive stakeholder plan and 60% positive feedback	Identify and analyze key stakeholders and the issues, and draft engagement approaches.	Undertaking engagement activities.	Review engagement strategies and effectiveness by way surveys	Revise and update stakeholder engagement strategy for the new financial year. 60% positive feedback from key stakeholders.
	At least 4 exhibitions per annum, 80% attendance of DOE events, monthly updated website and distribution of quarterly newsletters as per distribution list and channels.	Quarterly	At least 4 Exhibitions per annum, monthly updated website and 4 quarterly newsletters compiled and distributed.	One exhibition, participation in DOE events as per invitations	One exhibition, participation in DOE events as per invitations	One exhibition, participation in DOE events as per invitations	One exhibition, participation in DOE events as per invitations
				Updated website and one newsletter.	Updated website and one newsletter.	Updated website and one newsletter.	Updated website and one newsletter.

10. PROGRAMME 2: ENERGY RESEARCH, DEVELOPMENT, DEMONSTRATION AND DEPLOYMENT PROGRAMME

PURPOSE

The purpose of the energy research, development, demonstration and deployment programme is effectively knowledge creation that can support informed energy-related planning and decision-making. The research, development, demonstration and deployment programme is therefore primarily focused on developing a portfolio of confirmed viable (cost effective and low risk) and sustainable energy solutions- aligned with Government goals of energy security, energy sector transformation and diversification, economic development and environmental protection - that can confidently be incorporated into national plans and policy processes.

SUB-PROGRAMMES INCORPORATED WITHIN RESEARCH, DEVELOPMENT, DEMONSTRATION AND DEPLOYMENT

Energy research and development constitutes the first step in the energy development innovation chain that SANEDI is actively involved in. The focus is on identifying research opportunities that can be adapted and applied within the South African context and has the potential to diversify or contribute to the energy sector.

Several of SANEDI's thematic areas have projects that contribute towards the research, development, demonstration and deployment programme. The contributions from these areas constitute the sub programmes for research, development, demonstration and deployment.

The active sub programmes are the responsibility of the indicated components:

Sub-programmes	Components
Cleaner fossil fuels (including carbon capture and storage)	<ul style="list-style-type: none"> • CCS/shale gas/clean coal technologies
Renewable Energy	<ul style="list-style-type: none"> • RECORD
Data Repository and Management	<ul style="list-style-type: none"> • CESAR
Smart Grids and Network Automation	<ul style="list-style-type: none"> • Smartgrids /SASGI
Working for Energy	<ul style="list-style-type: none"> • Clean Energy Interventions and Solutions for Rural and Low Income Urban Communities
Cleantech Energy Development	<ul style="list-style-type: none"> • Localised Manufacturing and skills development (unfunded)
Human Development Capital	<ul style="list-style-type: none"> • Centre support and bursaries (unfunded)
Cleaner Mobility	<ul style="list-style-type: none"> • Non- motorised transport, PHEV, biofuel powered and gas vehicles (unfunded)

10.1. SUB-PROGRAMME 1: CLEANER FOSSIL FUELS (INCLUDING CARBON CAPTURE AND STORAGE): STRATEGIC OBJECTIVES

ID	Strategic Objective (output)	Strategic statement	Baseline
1	Technical Report addressing the implications and recommendations for the exploitation of shale gas in SA	Determination of the potential for Shale Gas in the energy economy of South Africa	Completed reports on : <ul style="list-style-type: none"> • CO2 as extraction agent • CO2 reduction potential • Matching supply and demand • Completed external reports: • Water requirements and waste water • Geography and surface aspects
2	Proof of concept and capacity building for carbon dioxide storage in SA	The determination of the potential and appropriateness of geological storage of carbon dioxide in South Africa – Pilot CO2 Storage Project (PCSP)	<ul style="list-style-type: none"> • Atlas and further analysis thereof • Preliminary design of the PCSP • Documentation of stakeholder concerns • International profile for PCSP to leverage capacity building and funding • Commitment of funding from MTEF and the World Bank
3	Determination of a business case for the commercialisation of carbon capture and storage	Oversight of the implementation of the National Carbon Capture and Storage Road Map and associated capacity building – South African Centre for Carbon Capture and Storage (SACCCS)	<ul style="list-style-type: none"> • National CCS Road map endorsed by Cabinet • CCS designated as one of the flagship programmes for mitigation of greenhouse gas emissions • Integral part of the NDP • Establishment of a bursary programme • Support projects of the CCS • Biennial capacity building conferences

CORPORATE GOVERNANCE AND ADMINISTRATION: STRATEGIC OBJECTIVES AND ANNUAL TARGETS

Strategic Objective (output)	Performance indicator	Audited Actual Performance 2014/15	Estimated performance (2015/16)	Medium Term Targets		
				2016/17	2017/18	2018/19
1. Determination of the potential for Shale Gas in the energy economy of South Africa	<p>Completed Reports on:</p> <ul style="list-style-type: none"> carbon dioxide as an extraction agent CO2 reduction potential demand and supply match water and waste issues risk assessment geography and surface issues <p>Syntheses Report</p>	<p>DoE workplan was approved</p> <p>Contracts for 4 tasks were put in place</p>	<p>Completed reports on internal tasks:</p> <ul style="list-style-type: none"> CO2 as extraction agent CO2 reduction potential Matching supply and demand <p>Completed external reports:</p> <ul style="list-style-type: none"> Water requirements and waste water Technical, environmental and economic risk evaluation Geography and surface aspects 	-	-	-
2. The determination of the potential and appropriateness of geological storage of carbon dioxide in South Africa – Pilot CO2 Storage Project (PCSP)	<p>Exploration , Design, Engineering, Construction and operation of a pilot carbon dioxide storage plant</p> <p>Determination of the commercialisation for carbon dioxide storage in SA</p> <p>Protocols for the monitoring of carbon dioxide</p>	<p>Interim PCSP foundation documentation was not achieved</p> <p>Interim pre – feasibility data analyses was not achieved</p> <p>Interim feasibility exploration plan was not achieved</p>	<p>Data inventory of existing geological information in the Algoa and Zululand Basins</p> <ul style="list-style-type: none"> Submission of application for exploration permit Environmental Impact Assessment Draft exploration plan 	Exploration Plan	Drilling exploration and coring	PCSP site characterisation
				Seismic exploration contracted	Geological analyses	Injection Plan
				Stakeholder Engagement Status report regarding concerns and resolutions	Site selection	PCSP construction plan

Strategic Objective (output)	Performance indicator	Audited Actual Performance 2014/15	Estimated performance (2015/16)	Medium Term Targets		
				2016/17	2017/18	2018/19
3	Oversight of the implementation of the National Carbon Capture and Storage Road Map and associated capacity building – South African Centre for Carbon Capture and Storage (SACCCS)	6 bursaries were awarded	<ul style="list-style-type: none"> Stakeholder engagement plan for 2015/16 Engagement with 20 stakeholders as addressed in the Stakeholder Engagement Plan Phase 1 PMP – Bongwana 	Phase 2 PMP – Bongwana Report of CO2 monitoring protocols	Stakeholder Engagement Status report regarding concerns and resolutions	Stakeholder Engagement Status report regarding concerns and resolutions
	<p>Bursary and non-bursary support report on the number of students and their research topics and publications</p> <p>CCS stakeholder engagement Reports on concerns raised</p> <p>R&D Project Reports.</p>		<ul style="list-style-type: none"> Award of bursary/ support to those who pass evaluation General CCS Stakeholder engagement status report Engagement with relevant stakeholders as addressed in the Stakeholder plan Facilitation of CCS 101 workshops for the learners CCS Conference 2015 Web site analysis Fact sheets and prospectus Participation Career and Science Expos 2 x CCS research projects initiated 	<p>Bursary and non-bursary support report on the number of students and their research topics and publications</p> <p>Stakeholder Engagement Status report regarding concerns and resolutions</p> <p>One CCS general R&D project completed – Final Report.</p> <p>One R&D Project Progress Report. One R&D project commenced.</p>	<p>Bursary and non-bursary support report on the number of students and their research topics and publications</p> <p>Stakeholder Engagement Status report regarding concerns and resolutions</p> <p>One CCS general R&D project completed – Final Report. One R&D Project Progress Report. One R&D project commenced.</p> <p>CCS Conference 2017</p>	<p>Bursary and non-bursary support report on the number of students and their research topics and publications</p> <p>Stakeholder Engagement Status report regarding concerns and resolutions</p> <p>One CCS general R&D project completed – Final Report. One R&D Project Progress Report. One R&D project commenced.</p>

CORPORATE GOVERNANCE AND ADMINISTRATION: STRATEGIC OBJECTIVES AND QUARTERLY TARGETS

Strategic Objective	Activity Performance indicator	Reporting Frequency	Annual Targets 2016/17	Quarterly targets			
				1st	2nd	3rd	4th
1	<p>Determination of the potential for Shale Gas in the energy economy of South Africa.</p> <p>Reports on:</p> <ul style="list-style-type: none"> • carbon dioxide as an extraction agent • CO2 reduction potential • demand and supply match • water and waste issues • risk assessment • geography and surface issues 	Quarterly	<p>Synthesis Report of programme.</p> <ul style="list-style-type: none"> • END 	<p>Synthesis Report of programme.</p> <ul style="list-style-type: none"> • END 			
2	<p>The determination of the potential and appropriateness of geological storage of carbon dioxide in South Africa – Pilot CO2 Storage Project</p> <p>Exploration, Design, Engineering, Construction and operation of a pilot carbon dioxide storage plant</p> <p>Determination of the commercialization for carbon dioxide storage in SA</p> <p>Protocols for the monitoring of carbon dioxide</p>	Quarterly	<p>Exploration Plan</p> <p>Seismic exploration contracted</p> <p>Phase 2 PMP – Bongwana Report</p> <p>Stakeholder Engagement Status report – concerns and resolutions</p>	<p>Exploration Plan Draft</p> <p>Exploration Plan</p> <p>Exploration Terms of Reference</p> <p>Phase 2 PMP Work Plan draft</p>	<p>Exploration Plan</p> <p>Exploration Terms of Reference</p> <p>Phase 2 PMP Field Work</p>	<p>Call for Proposals for Seismics</p> <p>Phase 2 PMP data analyses</p>	<p>Seismic contract</p> <p>PMP draft Final Report</p> <p>Stakeholder Engagement Status report – concerns and resolutions</p>

Strategic Objective	Activity Performance indicator	Reporting Frequency	Annual Targets 2016/17	Quarterly targets			
				1st	2nd	3rd	4th
3	Bursars and non bursars award letters	Quarterly	Award of bursary/ support to those who pass evaluation	Call for bursary proposals	Update bursary specifications	Bursary Progress Report	
	Stakeholder Engagement Status report		Stakeholder Engagement report regarding popularisation of CCS	Stakeholder Engagement	Stakeholder Engagement	Stakeholder Engagement	Stakeholder Engagement Status report
	2 x CCS research project contracts initiated through an inception meeting		One CCS general R&D project completed – Final Report. One R&D Project Progress Report. One R&D project commenced.	Final Report one project Progress Report one project Initiate one project	Acceptance of one project report	Acceptance one report	Terms of Reference for 2 projects

SUB – PROGRAMME 2: DATA REPOSITORY AND MANAGEMENT (CESAR): STRATEGIC OBJECTIVES AND ANNUAL TARGETS

Strategic Objective (output)	Performance indicator	Audited Actual Performance 2014/15	Estimated performance (2015/16)	Medium Term Targets		
				2016/17	2017/18	2018/19
1 To capacitate CESAR with the necessary resources (people and tools) to be able to undertake Energy Modelling Research	Number of training programmes initiated	New objective and indicator	PFT Terms of Reference Draft progress report templates Training Plan PFT meeting 1 Bi-annual Progress Report 1 Energy Modeller Training Progress Report 2 PFT Meeting 2	2 energy training programmes	N/A	N/A
2 To Provide energy policy guidance through energy modelling research.	Number of research reports finalized Energy modelling database updated	New objective and indicator Database fully developed and populated	Functional accurate integrated and user friendly database	3 completed working papers (approved by PFT) <ul style="list-style-type: none"> Transport Study Fuel switching Renewable Energy Integration for Demand Side Management using Smart Loads) 		

CORPORATE GOVERNANCE AND ADMINISTRATION: STRATEGIC OBJECTIVES AND QUARTERLY TARGETS

Strategic Objective	Activity Performance indicator	Reporting Frequency	Annual Targets 2016/17	Quarterly targets			
				1st	2nd	3rd	4th
1 To capacitate CESAR with the necessary resources (people and tools) to be able to undertake Energy Modelling Research	Number of training programmes initiated	Quarterly	2 energy training programmes	Energy Modeller Training Progress Report 1	PFT Meeting 1	Energy Modeller Training Progress Report 2	PFT Meeting 2
				IEA demand side training course	Biannual Training Progress Report 1		Biannual Progress Report 2
2 To Provide energy policy guidance through energy modelling research.	Number of research reports finalized	Quarterly	3 completed working papers (approved by PFT) <ul style="list-style-type: none"> Phase 2 Transport Study Fuel switching Renewable Energy Integration for Demand Side Management using Smart Loads 	Research Project Management Plan	Transport Study Working paper 2 compiled	Data Base with projections populated & Updated South African TIMES model updated	Transport Study Working Paper 3 compiled Transport Study Project Close Out Report compiled Fuel switching/ Distribution Working Paper Compiled Renewable Energy Integration for demand side management using smart loads Working Paper Compiled Fuel switching/ Distribution Stakeholder Workshop Renewable Energy Integration for demand side management using smart loads Stakeholder Workshop
				Transport study workshop	Biannual Research Project status report	South African TIMES model updated	Renewable Energy Integration for demand side management using smart loads Stakeholder Workshop

10.3. SUB- PROGRAMME 3: SMART GRIDS AND NETWORK AUTOMATION: STRATEGIC OBJECTIVES

ID	Strategic Objective (output)	Strategic statement	Baseline
1	Electricity supply industry capacity building through workshops, knowledge sharing, international and local collaboration	To Manage Industry participation and contributions in SA through local and international collaboration for the development of Smart Grid Policy recommendations and industry capacity building	Draft Smart Grid Vision document
2	EU donor funded Smart Grid Programme Demonstration projects with How to Guides , business case and policy recommendations for the following areas <ul style="list-style-type: none"> • Enhanced revenue management • Advanced asset management • Active network management • FBE/IBT/TOU tariff demonstrated using AMI 	To use technology as an enabler of change in the municipal environment in following areas <ul style="list-style-type: none"> • Enhanced revenue management • Advanced asset management • Active network management • Free Basic Electricity /Inclining Block Tariff Demonstration 	Regulation 773, Renewable strategy, Climate change strategy, NDP, IRP 2010, PICC, IEP2012, NEES, Presidential State of Nation address 2014. ADAM and the AG reports

SUB-PROGRAMME 3: SMART GRIDS: STRATEGIC OBJECTIVES AND ANNUAL TARGETS

Strategic Objective (output)	Performance indicator	Audited Actual Performance 2014/15	Estimated performance (2015/16)	Medium Term Targets			
				2016/17	2017/18	2018/19	
1.1	Number of workshops held with industry associations evidenced by reports and minutes	Four meetings were held	Two Sessions have been held, third session scheduled for December 2nd 2015, reports and minutes shared with members	4 Four (4) workshops	4 Four (4) workshops	4 Four (4) workshops	
1.2	Number of Research Brief's on individual Research topics received from UP and approved by the PFT.	New indicator	Collaboration agreement signed Terms of reference signed Draft of Research Brief on (Smart Metering code, and Advanced Metering Infrastructure security guideline)	Draft the Smart Metering code to complement the SA Grid code	Investigate the future Role of the Distribution System Operator in relationship with Active Network Management	Facilitate the development of a Smart Grid metering lab at the university of Pretoria	
		New indicator		Draft the Advanced Metering Infrastructure Security guideline			
1.3	Participation in the biannual exco meeting	A Smart Metering code was partially achieved	ISGAN meeting to be attending in fourth quarter of 2015/16	2 SANEDI Reports on ISGAN EXCO meetings to be shared with SASGI forum	2 SANEDI Reports on ISGAN EXCO meetings to be shared with SASGI forum	2 SANEDI Reports on ISGAN EXCO meetings to be shared with SASGI forum	
		Advanced Metering Infrastructure Guideline					
		AMI Security guideline					The AMI security guideline was partially completed
		Attended 2 EXCO meetings					
	Participation in the biannual exco meeting	Attended 2 EXCO meetings					
	International Smart Grid collaboration through participating in the ISGAN (International Smart Grid Action Network)						

Strategic Objective (output)	Performance indicator	Audited Actual Performance 2014/15	Estimated performance (2015/16)	Medium Term Targets		
				2016/17	2017/18	2018/19
2.1 EU Donor Funded programme : To use technology as an enabler of change in the municipal environment in following areas <ul style="list-style-type: none"> Enhanced revenue management Advanced asset management Active network management FBE/IBT/TOU tariff demonstrated using AMI 	Implementation guidelines for each of the 4 Project Areas and each of the 7 project phases Consolidated Lesson Learned Report, Business case and, How to guide for the Electricity Distribution Industry and Policy recommendations paper for the DoE on Strategic priorities addressed by projects	New indicator New indicator	Guidelines for all 4 project areas in line with our planned schedule have been developed, Outstanding are 4th Quarter guidelines	A Consolidated Lessons Learned Report for the Electricity Distribution Industry A Consolidated Business Case for the Electricity Distribution Industry A Consolidated How to Guide manual for Electricity Distribution Industry Policy recommendation on DoE Strategic priorities	N/A	N/A

CORPORATE GOVERNANCE AND ADMINISTRATION: STRATEGIC OBJECTIVES AND QUARTERLY TARGETS

Strategic Objective	Programme performance indicator	Reporting Frequency	Annual Targets 2016/17	Quarterly targets			
				1st	2nd	3rd	4th
1 SOUTH AFRICAN SMART GRIDS INITIATIVE (SASGI)							
1.1 To Manage Industry participation and collaboration towards the sustainable development of a Smart Grid in South Africa	Number of workshops held evidenced by minutes and Reports from Sessions held	Quarterly	4 workshops	Workshop Report	Workshop Report	Workshop Report	Workshop Report
1.2 To Collaborate with the University of Pretoria and address the critical Electricity Industry Challenges through research and capacity development.	<p>Reports on:</p> <ul style="list-style-type: none"> • Smart Metering Code • Advanced Metering Infrastructure security guideline • Advance Metering Infrastructure guideline • Smart meter short course curriculum developed • Number of bursaries awarded • Smart Metering lab 	Quarterly	<p>Reports on:</p> <ul style="list-style-type: none"> • Smart Metering Code • Advanced Metering Infrastructure security guideline • Advance Metering Infrastructure guideline • Smart meter short course curriculum • Number of bursaries awarded progress - 4 hon - 6 masters - 1 PHD • Smart Metering Lab development progress 	<p>First Progress Reports on :</p> <ul style="list-style-type: none"> • Research Projects • Student Bursaries awarded • Smart metering Lab • Smart meter short course curriculum 	<p>Second Progress Reports on :</p> <ul style="list-style-type: none"> • Research Projects • Student Bursaries awarded • Smart metering Lab • Smart meter short course curriculum 	<p>Third Progress Reports on :</p> <ul style="list-style-type: none"> • Research Projects • Student Bursaries awarded • Smart metering Lab • Smart meter short course curriculum 	<p>Final Reports on :</p> <ul style="list-style-type: none"> • Research Projects • Smart meter short course curriculum • Progress Report • Student Bursaries awarded • Smart metering Lab
1.3 International Smart Grid collaboration through participating in the ISGAN (International Smart Grid Action Network)	Biannual Exco reports		Biannual Exco report shared with SASGI	No target	No target	Exco report	Exco report

Strategic Objective	Programme performance indicator	Reporting Frequency	Annual Targets 2016/17	Quarterly targets			
				1st	2nd	3rd	4th
2	EU DONOR FUNDED SMART GRID PROGRAMME						
2.1	<p>To use technology as an enabler of change in the municipal environment in following areas</p> <ul style="list-style-type: none"> Enhanced revenue management Advanced asset management Active network management FBE/IBT/TOU tariff demonstrated using AMI <p>Implementation guidelines for each of the 4 Project Areas and each of the 7 project phases</p> <ul style="list-style-type: none"> Consolidated Lesson Learned Report Business case and, How to guide for the Electricity Distribution Industry and Policy recommendations paper for the DoE on Strategic priorities addressed by projects 	Quarterly	<ul style="list-style-type: none"> A Consolidated Lesson Learned Report for the Electricity Distribution Industry A Consolidated Business Case for the Electricity Distribution Industry A Consolidated How to Guide manual for Electricity Distribution Industry Policy recommendation on DoE Strategic priorities 	Policy recommendation on DoE Strategic priorities	Consolidated Business Case for the Electricity Distribution Industry	Consolidated How to Guide manual for Electricity Distribution Industry	Consolidated Lesson Learned Report for the Electricity Distribution Industry

10.4. SUB- PROGRAMME 4: RENEWABLE ENERGY: STRATEGIC OBJECTIVES

The following strategic objectives (outputs) have been identified for the Renewable Energy sub- programme

ID	Strategic Objective (output)	Strategic statement	Baseline
1	Increased deployment of renewable energy	To provide a centre that coordinates and promotes RE research, development and demonstration in SA through collaboration and funding	RECORD is operational Collaborative funding with GIZ, Eskom and UNOPS
2	Increased renewable energy and energy efficiency awareness	Provide technical and management support through tendering, contracting, payment and reporting to the Danish RE EE programme's DoE and ESKOM components	Projects in place Project procurement plan
3.	Raised SA's renewable energy R&D profile through international collaboration and capacity building	Foster international collaboration <ul style="list-style-type: none"> To globalize expertise and leverage research funding To gain knowledge 	Several IEA implementation agreement memberships Hosting the Southern Africa secretariat of REEEP Participate in EU Horizon 2020
4.	Increased wind energy integration and deployment in SA	Develop maps, database , tools and guidelines for effective wind siting and decision making for the national wind programme	Wind atlas and database

SUB- PROGRAMME 4: RENEWABLE ENERGY: STRATEGIC OBJECTIVES AND ANNUAL TARGETS

Strategic Objective (output)	Performance indicator	Audited Actual Performance 2014/15	Estimated performance (2015/16)	Medium Term Targets		
				2016/17	2017/18	2018/19
1. To provide a centre that coordinates and promotes RE research, development and demonstration in SA through collaboration and funding	Number of collaborative projects and platforms with industry, government and government entities with respect to : <ul style="list-style-type: none"> • Policy improvement • Knowledge sharing • Advisory • Research collaboration 	State of energy research in SA published Information exchange sessions with funding counterparts implemented Existing projects funded and managed Algal bioenergy platform managed Initiated " state of waste to energy research in SA" study Support rendered to SARETEC (South African Renewable Energy Technology Centre) and preparation of first classes in SA	Government representation for RE sectorial activities through strategic inputs into the RE sector. Including fulfilling an inter-departmental MOU, industry engagement, knowledge-sharing role and advisory capacity.	Planning and development of SANEDI knowledge sharing and advisory projects and platforms	Planning and development of SANEDI knowledge sharing and advisory projects and platforms	Planning and development of SANEDI knowledge sharing and advisory projects and platforms
2. Provide technical and management support through tendering, contracting, payment and reporting to the Danish RE EE programme's DoE and ESKOM components	Number of progress and financial reports	Framework for WASA phase 2 conceptualised	Bi-annual Financial and Progress Reports to the DoE	Bi-annual Financial and Progress Reports to the DoE	Bi-annual Financial and Progress Reports to the DoE	Conclude programme with final report and audit.

Strategic Objective (output)	Performance indicator	Audited Actual Performance 2014/15	Estimated performance (2015/16)	Medium Term Targets		
				2016/17	2017/18	2018/19
3. Develop maps, database, tools and guidelines for effective wind siting and decision making for the national wind programme		Created an observational wind atlas		Publish an interim Wind atlas and database	Publish an extreme Wind atlas and database	Publish final wind atlas, database and resource map
4. Foster international collaboration <ul style="list-style-type: none"> To globalize expertise and leverage research funding To share and gain knowledge that is disseminated to the RE community 	Number of IEA implementation agreement memberships Number of joint projects under Southern Africa secretariat of REEEP	Existing IEA and REEEP implementing agreements maintained for Horizon 2020 and other EU –SA initiatives with DST and key objectives outlined in the agreements managed	3 memberships (OES, Bioenergy, SHC) 2 joint projects (Switch Africa Green and The Urban Waterworks) 1 H2020 event 1 Call Analysis	Representation of South Africa in international fora to exchange technical knowledge/ expertise and seek research funding	Representation of South Africa in international fora to exchange technical knowledge/ expertise and seek research funding	Representation of South Africa in international fora to exchange technical knowledge/ expertise and seek research funding

SUB- PROGRAMME 4: RENEWABLE ENERGY: STRATEGIC OBJECTIVES AND QUARTERLY TARGETS

Strategic Objective	Programme performance indicator	Reporting Frequency	Annual Targets 2016/17	Quarterly targets			
				1st	2nd	3rd	4th
1. To Provide a centre that coordinates and promotes RE research and development in SA through collaboration and funding	Number of collaborative projects and platforms with industry, government and government entities with respect to : Policy improvement Knowledge sharing Advisory Research collaboration	Quarterly	Planning and development of SANEDI knowledge sharing and advisory projects and platforms 1 X SHW Platform 1 X Solar High Temperature Platform Meeting	Host the annual Meeting for Algal Bioenergy	Convene meeting for the SWH Platform	Convene meeting for the Solar High Temperature Platform	Host the annual Meeting for Waste to Energy
				SANEA/RERE award call	SANEA/RERE award adjudication	Prize giving for SANEA/RERE award	SANEDI hosted SAREC event.
	Numbers of Events hosted by SANEDI	Quarterly	2 X SANEDI co/ hosted event.	Inputs into DEA ERG SEA reports	Attend SARETEC advice and advisory board Meeting	Attend SARETEC advice and advisory board Meeting	Attend SARETEC advice and advisory board Meeting
	Number of Expert reference group and Steering committee meetings attended	Quarterly	Meetings attended per invitation.	Finalise ADMIRE Solar Cooling study	Analyse outcomes of Solar Cooling study and determine phase two of the study	Advise and aid where possible in EcoVest training implementation	Advise and aid where possible in EcoVest training implementation
	Number of collaboration arrangements entered into	Quarterly	Collaboration arrangement entered into on RE research projects	Advise and aid where possible in EcoVest training implementation	Advise and aid where possible in EcoVest training implementation	Advise and aid where possible in EcoVest training implementation	Advise and aid where possible in EcoVest training implementation

Strategic Objective	Programme performance indicator	Reporting Frequency	Annual Targets 2016/17	Quarterly targets			
				1st	2nd	3rd	4th
				PV research scan in progress	PV research scan complete		
	Number of bursaries awarded	Quarterly	2 Bursaries per year RE Skills Development and Training in collaboration with training institutions and postgraduate associations	Engage with DBREV on student bursary award			Award DBREV Bursary
	2 RE projects completed	Quarterly	Collaboration and Coordination across the RE sector focusing on solar and biomass/waste energy as well as energy storage	Engage with SARETEC on student bursary award	Draft Proposal to GIZ for co-support to SARETEC and draft subsequent Project Agreement	Finalise project agreement	Award SARETEC Bursary
				Building of Waste2Energy demonstration plant in progress and commissioning commences	Building and commissioning of plant complete	Process optimisation	Process optimisation complete and hand over.
				Seek funding for Solar Turtle roll out			
2. Provide support through tendering, contracting, payment and reporting to the Danish renewable programme's DoE and ESKOM components	A report on status, progress and audit of programme to date	Quarterly	Update of procurement plan, issue tenders, sign contracts and facilitate payments as per procurement plan	Update of Procurement plans for all ToRs.	Update procurement sheets Facilitate the procurement of services for ToRs approved by the Advisory board	Facilitate payment requisitions for service provider invoices approved for payment by DoE, Eskom	
		Bi-annually	Bi-annual Financial and Progress Reports to the DoE.	Facilitate the procurement of services for ToRs approved by the Advisory board	Facilitate payment requisitions for service provider invoices approved for payment by DoE, Eskom	Prepare bi-annual Financial and Progress Reports to the DoE	
		Quarterly	Conclude programme with final report and audit.	Facilitate payment requisitions for service provider invoices approved for payment by DoE, Eskom	2015/16 Annual audit report submitted to Danish embassy	Implementing Partners Final Report submitted to Danish Embassy	

Strategic Objective	Programme performance indicator	Reporting Frequency	Annual Targets 2016/17	Quarterly targets			
				1st	2nd	3rd	4th
3.	Implement, manage & Coordinate the WASA phase II Program as per Danish RE EE Program DoE, SANEDI, Eskom and WASA II SANEDI, Implementation Partners Agreement and approved work plan.	Quarterly	4 x Quarterly report on WASA II implementation to Danish Embassy to date with minutes of meetings and attendance registers	Prepare bi-annual Financial and Progress Reports to the DoE.	updating of WASA II data collection, website display & data download	Final audit report (2016) with Closure of account submitted to Danish Embassy	Quarterly report submitted to Danish Embassy
				4th PIU meeting minutes and action plan	Quarterly report submitted to Danish Embassy	5th PIU meeting minutes and action plan	Quarterly report submitted to Danish Embassy
				updating of WASA II data collection, website display & data download	Quarterly report submitted to Danish Embassy	updating of WASA II data collection, website display & data download	updating of WASA II data collection, website display & data download
				WASA II Progress and financial report submitted to DoE		Quarterly report submitted to Danish Embassy	Observational Wind Atlas for 1st 12 months published
				Quarterly report submitted to Danish Embassy		WASA II 2017/18 Bus Plan and budget submitted	
						WASA II Progress and financial report submitted to DoE	
4.	Foster international collaboration in order to globalize knowledge and grow potential funding pool, through contractual agreements between SANEDI and international partners.	Quarterly	4 International meetings attended	Participate in at least 1 IEA ExCo (Bio, SHC and OES)	Attend Danish RE programme advisory board meeting (report)	Participate in at least 2 IEA ExCo (Bio, SHC and OES)	
				Sign H2020 contract with DST and submit business		Attend H2020 Info and brokerage Days and disseminate call information to researchers through network	Submit final report on H2020 activities to DST
			At least 2 joint projects with REEEP	Draft and submit project proposals	Signing of contracts for proposals accepted	Project implementation as per milestones in the contract	Project implementation as per milestones in the contract

10.5. SUB- PROGRAMME 5: WORKING FOR ENERGY: STRATEGIC OBJECTIVES

The initial focus of the Working for Energy programme was to execute applied research, demonstrate and implement clean energy solutions for the benefit of the rural and low income urban areas, with special emphasis on sustainable job creation, the empowerment of women, youth and people with disabilities under the Expanded Public Works Programme.

The Programme has implemented a number of Greening projects in various areas and a number of gaps to achieve sustainability have been identified namely, project/programme partnerships with consistence of funding, maintenance and operation of projects, enterprise development in the sector, access to the markets for the products and services rendered, revenue generation of projects, training of beneficiaries, volume work amongst others.

ID	Strategic Objective (output)	Strategic statement	Baseline
1.	To research essential aspects of Clean Energy relating to the provision clean energy solutions to rural and low income communities	Undertake various Research Studies to advance sustainable access and use of clean energy solutions by rural and low income communities	Two (2) Research Projects
2.	To Implement Clean Energy technologies and services to low income communities	Undertake selected clean energy projects to demonstrate the use of various renewable energy applications in low income rural and urban communities for possible national roll out.as alternative mode of energy provision in various applications.	Eighty (80) beneficiary establishments (schools, ECDC, Primary Schools, High Schools, community facilities, productive facilities)
3.	On the Job Training	To Enhance the Capability of selected Practitioners to Implement Clean Energy Solutions	Three (3) on the job Biogas Digester Training Programmes implemented,

WORKING FOR ENERGY: STRATEGIC OBJECTIVES AND ANNUAL TARGETS

Strategic Objective (output)	Performance indicator	Audited Actual Performance 2014/15	Estimated performance (2015/16)	Medium Term Targets		
				2016/17	2017/18	2018/19
1. To research essential aspects of Clean Energy relating to the provision of clean energy solutions to rural and low income communities.	Undertake various Research Studies to advance sustainable access and use of clean energy solutions by rural and low income communities	New objective and indicator	1 Completed Research project	1 Completed Research project		
2. To Implement Clean Energy technologies and services to low income communities	Undertake selected clean energy projects to demonstrate the use of various renewable energy applications in low income rural and urban communities for possible national roll out.as alternative mode of energy provision in various applications.		47 x Biogas Digesters/ Greening Projects Constructed	90x Biogas Digesters/ Greening Projects Constructed	1x Torrefication Projects Constructed 15x Biogas Digesters/ Greening Projects Constructed	1x Gasification Project Constructed
3. On the Job Training	To enhance the capability of selected Practitioners to Implement Clean Energy Solutions		1x Training Programme Implemented	1x Training Programme Implemented	1x Training Programme Implemented	1x Training Programme Implemented

SUB- PROGRAMME 4: RENEWABLE ENERGY: STRATEGIC OBJECTIVES AND QUARTERLY TARGETS

Strategic Objective	Programme performance indicator	Reporting Frequency	Annual Targets 2016/17	Quarterly targets			
				1st	2nd	3rd	4th
1. To research essential aspects of Clean Energy relating to the provision clean energy solutions to rural and low income communities.	Undertake various Research Studies to advance sustainable access and use of clean energy solutions by rural and low income communities	Quarterly	1x Completed Research project1	Draft Research Report 2 Completed	Draft Research Report 3 Completed	Draft Research Report 4 Completed	Final Research Report Completed
2. To Implement Clean Energy technologies and services to low income communities	Undertake selected clean energy projects to demonstrate the use of various renewable energy applications in low income rural and urban communities for possible national roll out. as alternative mode of energy provision in various applications.	Quarterly	90x Biogas Digester/ Greening Projects Constructed.	20x Digester/ Greening Projects Constructed.	20x Digester/ Greening Projects Constructed	25x Digester/ Greening Projects Constructed	25x Digester/ Greening Projects Constructed
3. On the Job Training	To Enhance the Capability of selected Practitioners to Implement Clean Energy Solutions	Quarterly	2x Training Programmes Implemented		1x Onsite Training Programme Implemented		1x Onsite Training Programme Implemented

11. PROGRAMME 3: ENERGY EFFICIENCY: STRATEGIC OBJECTIVES

Low electricity prices have historically been a key inhibitor for energy efficiency and contributed to a wasteful energy culture in South Africa. Unfortunately, these energy habits threaten the sustainability of the environment, natural resources and our planet for future generations. It also means that South Africa's energy productivity is comparatively low. Resource saving and greater utilisation efficiency is therefore of utmost importance.

Globally communities will have to prioritise the conservation of energy, water, materials and land, the comprehensive utilisation of resources and the development of a recycling economy, establishing energy-efficient modes of production, consumption and of urban and rural construction. Energy is intrinsically linked to and interweaved into this list.

The purpose of SANEDI's Energy Efficiency programme is to accelerate a move towards a resource and particularly, an energy (including gas, liquid fuels, electricity and water) efficient society. The National Energy Efficiency Strategy creates the primary context and direction for energy efficiency in South Africa. This strategy is currently under review (presented to Cabinet on 7 November 2012 and gazetted on 29 November 2012 for public comment⁶) and indications are that SANEDI's role will be expected to align with and support the revised strategy and industry structure once approved.

Strategic Objective (output)		Strategic statement	Baseline
1	Provide assurance to SARS on energy savings claims, in line with published regulations, and perform a reporting function to key stakeholders (DoE, National Treasury, SARS (through National Treasury), and DTI) by : issuing Energy Efficiency tax certificates for approved and compliant applications and copying them to the Revenue Service.	Provide an energy efficiency support function for the certification of energy savings for tax reduction claims and monitoring impacts and benefits.	<p>Section 12 I: A review (conducted for the 2011/12 implementation year), of the evaluation process and service provided, confirmed that SANEDI successfully supported the first year of implementation of Section 12I tax incentive and a second review has been conducted in 2015/ 2016.</p> <p>Section 12 L: In terms of Clause 3 of the Regulations promulgated to support Section 12L of the Income Tax Act, 1962, on the Allowance for Energy Efficiency Savings, SANEDI is specifically mandated with the role of implementing these incentives on behalf of the South African Revenue Service (SARS) and National Treasury. This Regulation remains in force until 1 January 2020 and in order to effectively implement this activity, SANEDI is required in terms of 3(1) of the Regulation, <i>'to appoint suitably qualified persons to consider reports submitted by a person claiming the allowance'</i>.</p>

6 Statement on Cabinet meeting of 7 November 2012, available from <http://www.gcis.gov.za/content/newsroom/media-releases/cabstatements/7Nov2012> November 2012. The draft strategy was gazetted on 29 November 2012 as document 1000 of 2012. Opportunity for comments close on 30 January 2013.

Strategic Objective (output)		Strategic statement	Baseline
2.	To support and provide capability building through designed programmes in the area of energy efficiency	Continue the Energy Efficiency Hub initiative to strengthen energy related research, human capacity development, and market transformation and enterprise development initiatives that will be tracked against a comprehensive existing set of KPIs.	Comprehensive set of KPIs with baseline performance for 2014/2015, as follows: Number of journal publications: 8; Number of conference papers: 15; Number of registered students: 50; Number of Graduates: 10; Number of modules/short courses offered: 45; Number of externally funded projects: 30; Female student ratio: 18%; PDI ratio: 45%.
3.	To fulfil the role of a national energy efficiency champion through collaborative activities with industry partners aimed at the promotion of new technologies thereby increasing the uptake of energy efficient technologies	Support industry stakeholders and the DoE, towards achieving improved energy efficiency in collaboration with local and international partners, by various initiatives.	Initial contracted data collection for bigEE database has been completed and published on the website. The current number of SANAS-accredited bodies is six (6) and this is insufficient to meet the growing demand for the Energy Efficiency tax incentives. SANEDI has conducted the initial feasibility of this activity in South Africa, through limited pilot activities and engagement with potential suppliers of the required products and the USA – DoE.

WORKING FOR ENERGY: STRATEGIC OBJECTIVES AND ANNUAL TARGETS

Strategic Objective (output)	Performance indicator	Audited Actual Performance 2014/15	Estimated performance (2015/16)	Medium Term Targets		
				2016/17	2017/18	2018/19
1. Provide assurance to SARS on energy savings claims, in line with published regulations, and perform a reporting function to key stakeholders (DoE, National Treasury, SARS (through National Treasury), and DTI) by : issuing Energy Efficiency tax certificates for approved and compliant applications and copying them to the Revenue Service.	Processing of applications within 6 weeks of receipt	Launched and implemented an online system to accurately process 12L applications Four 12l applications were evaluated and seven 12L applications were processed	Review and issue a tender to improve/ upgrade the current online processing system, to ensure compliance with the legislation	Process all applications within 6 weeks of receipt	Process all applications within 6 weeks of receipt	Process all applications within 6 weeks of receipt
	Number of reports submitted to key stakeholders as required by legislation	The second annual review / report was completed for 12L but was not published		Quarterly 12L reports to DoE and National Treasury Annual 12l draft report submitted to Dti for comments	Quarterly 12L reports to DoE and National Treasury Annual 12l draft report submitted to Dti for comments	Quarterly 12L reports to DoE and National Treasury Annual 12l draft report submitted to Dti for comments
2. To support and provide capability building through designed programmes in the area of energy efficiency	Number of energy efficiency capacity building programmes undertaken	15 journal publications 24 conference papers 100 registered students 23 graduates 45 modules and short courses 37 externally funded projects R2.5m external funding received 19% female staff ratio 35% PDI ratio	Funds transferred to the Hub as per contractual agreements 3 x reports submitted to DST	2 Energy Efficiency capacity building programmes undertaken	2 Energy Efficiency capacity building programmes undertaken	2 Energy Efficiency capacity building programmes undertaken

Strategic Objective (output)	Performance indicator	Audited Actual Performance 2014/15	Estimated performance (2015/16)	Medium Term Targets		
				2016/17	2017/18	2018/19
3. To fulfil the role of a national energy efficiency champion through collaborative activities with industry partners aimed at the promotion of new technologies thereby increasing the uptake of energy efficient technologies	Number of projects undertaken	<p>BigEE project completed successfully</p> <p>The appliances aspect of the best available technologies and non-best available technologies has been completed and uploaded on the website.</p> <p>The data with regards to buildings has been collected, analysed and adopted.</p> <p>The energy efficiency policies which cover both appliances and buildings were completed.</p> <p>The climatic zone map was developed and is being updated by CSIR.</p> <p>The TAF function was carried out successfully as per the contracted outputs.</p> <p>The National M&V paper was completed but was not uploaded on the international platform.</p> <p>The consolidation</p>	<p>X4 secondary data submissions to Wupperthal</p> <p>4 workshops held during the year</p> <p>1 cool roofs workshop hosted in SA</p> <p>X4 simulations per annum for cool roofs</p>	3 energy efficiency projects undertaken to champion energy efficiency	3 energy efficiency projects undertaken to champion energy efficiency	3 energy efficiency projects undertaken to champion energy efficiency

PROGRAMME 3: ENERGY EFFICIENCY: STRATEGIC OBJECTIVES AND QUARTERLY TARGETS

Strategic Objective	Programme performance indicator	Reporting Frequency	Annual Targets 2016/17	Quarterly targets			
				1st	2nd	3rd	4th
Provide assurance to SARS on energy savings claims, in line with published regulations, and perform a reporting function to key stakeholders (DoE, National Treasury, SARS (through National Treasury), and DTI) by : issuing Energy Efficiency tax certificates for approved and compliant applications and copying them to the Revenue Service.	Processing of applications within 6 weeks of receipt	Quarterly	Process all applications within 6 weeks of receipt	Process all applications within 6 weeks of receipt	Process all applications within 6 weeks of receipt	Process all applications within 6 weeks of receipt	Process all applications within 6 weeks of receipt
	Number of reports submitted to key stakeholders as required by legislation	Quarterly	Quarterly 12L reports to DoE and National Treasury Annual 12l draft report submitted to Dti for comments	4th quarterly report for 15/16	1st quarterly report for 16/17	2nd quarterly report for 16/17	3rd quarterly report for 16/17 Annual 12l draft report submitted to Dti for comments
To support and provide capability building through designed programmes in the area of energy efficiency	Number of energy efficiency capacity building programmes undertaken	Quarterly	2 Energy Efficiency capacity building programmes undertaken	4th quarterly report on the Hub's performance submitted to the DST	1st quarterly report on the Hub's performance submitted to the DST	2nd quarterly report on the Hub's performance submitted to the DST	3rd quarterly report on the Hub's performance submitted to the DST
				Commence training of M&V professionals	Accreditation with SANAS	Accreditation with the EEDSM Hub	Certification of M&V professionals
To fulfil the role of a national energy efficiency champion through collaborative activities with industry partners aimed at the promotion of new technologies thereby increasing the uptake of energy efficient technologies	Number of projects undertaken	Quarterly	3 energy efficiency projects undertaken to champion energy efficiency	Quarterly management of South African BigEE database	Quarterly management of South African BigEE database	Quarterly management of South African BigEE database	Quarterly management of South African BigEE database
				Training of applicators in cools roof technology	Commence with demonstration of cool roofs project	Monitoring and reporting demonstration project	Knowledge sharing around the effectiveness of the cool roofs technology
				Sign collaborative agreements for new projects	Finalise and commence implementation of the project plan	Implementation of project plan	Implementation of project plan

12. RISKS

A number of risk exposures, that may affect the realisation of the strategic objectives have been identified. Mitigation strategies required to mitigate risk exposure will be implemented, monitored and evaluated on a quarterly basis to determine the effectiveness thereof. Out of the identified risk exposures in the global risk register, SANEDI has priorities and focused on the following top 7 risks.

Strategic Objective		Risk description	Controls in place	Link to strategic objective
1.1	Inadequate funding at institutional level.	Insufficient funds to support its objectives.	Ensure plans on strategies are aligned to government priorities Leverage additional funding Stakeholder management.	Corporate Governance and Administration. Applied Energy Research Programme. Energy Efficiency.
1.2	Company exposure to project risk.	The risk that projects may not be successful and delivered within time, cost and quality.	Project design to avoid pitfalls Indemnity insurance. Compliance with legislation and regulations. Contractor monitoring and evaluation.	Applied Energy Research Programme. Energy Efficiency.
1.3	Inability to recruit and retain key skills.	The inability to recruit and retain the key skills to deliver on its mandate.	Internship programme. Skills development and retention plan. Mentorship programme Establish and strengthen in-house HR capacity	Corporate Governance and Administration. Applied Energy Research Programme. Energy Efficiency.
1.4	Loss of institutional memory.	Risk that institutional memory may be lost	Succession planning policy Mentorship programme.	Succession planning policy Mentorship programme. Corporate Governance and Administration Applied Energy Research Programme Energy Efficiency.
1.5	Mandate sustainability.	Sustainability of the organisation is at risk.	Excellent project delivery Continuous stakeholder engagement. Establishing joint collaboration projects. Marketing and communication.	Corporate Governance and Administration. Applied Energy Research Programme. Energy Efficiency.
	Business Continuity Risk.	Inadequate Business Continuity.	Disaster Recovery Plan / Business Continuity Succession Planning policy	Corporate Governance and Administration Applied Energy Research Programme Energy Efficiency.

13. PUBLIC-PRIVATE PARTNERSHIPS AND DONOR FUNDING

The Department of Energy is not directly responsible for energy sector infrastructure development and as such SANEDI does not link into a long-term infrastructure plan.

The Department do however link to Eskom, Municipal and industry infrastructure plans, but none of those identified in the current Strategic Plan are of specific relevance to SANEDI's areas of activity.

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 municipalities 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. Working for Energy projects are good examples of projects involving possible Public Public Partnerships. In the case where a private management company is required to operate a facility allocated to SANEDI on a concessional basis, SANEDI intends establishing a Public Private Partnership to manage such a relationship. SANEDI will also pursue the leveraging of funds from local and international partners and donors to implement key projects. SANEDI currently manages the following strategic partnerships with private entities and global organisations:

Donor	Project Name	Period of Commitment	Audited outcome	Estimated Outcome	Medium-term Expenditure Estimate		
			2014/15 '000	2015/16 '000	2016/17 '000	2017/18 '000	2018/19 '000
Danish	Danish Commercial building project	18 months	40	-	-	-	-
Europeana Union	European Union Project (COCATE)	36 months	98	114	-	-	-
DST	FP7	36 months	100	100	100	100	-
Danish	Danish RE EE program	48 months	13,545	32,160	2,838	3,508	-
BHP Billiton, Anglo Operations, Optimum COAL, Green Road, Shanduka, Eskom, SASOL, EXXARO, SANEDI, SACSP	SA Road Map, Carbon capture and storage	12 months (with possible extension)	3,000	1,000	-	-	-
SDC	SDC EE Monitoring and Implementation Project	Until terminated by mutual agreement	2,667	2,865	-	-	-
Europeana Union (Through RDP fund)	Smart Grids Project	24 months	28,036	107,000	-	-	-
GIZ	SAIREC	12 months	-	26,740	-	-	-
WORLD BANK	PCSP	Not concluded	-	-	400,000	-	-
REEEP	REEEP Secretariat	12 months	-	130	-	-	-
REEEP	REEEP Switch	24 months	-	914	914	-	-

14. APPENDIX A: POLICY CONTEXT

A comprehensive list of relevant legislation and policy that shapes the context for SANEDI's activities and focus is listed below- alphabetically and not order of importance.

Legislation/Policy	Description of focus	Stated or derived SANEDI mandate
2011 Budget Vote Speech by the Deputy Minister of Energy, Ms. Barbara Thompson, MP E249, National Assembly, Parliament, Cape Town 26th May 2011.	Budget Vote Speech.	In terms of SANEDI's role, it is expected that they will become the repository of all energy efficiency programmes. This requires them to oversee energy efficiency initiatives, in particular, to assist with the certification of energy savings achieved by those companies that seek to claim tax deductions under the Income Tax Amendment Act. We have secured the concurrence of the Minister of Finance for energy efficiency incentives under the Standard Offer and Energy Efficiency Tax Incentive Scheme, which will be in place this year.
2011 National Council of Provinces (NCOP) Budget Vote speech by the Minister of Energy, Ms Dipuo Peters, MP, Old Assembly Chamber, Parliament, Cape Town.	Budget Vote Speech.	Last year we committed to establishing the South African National Energy Development Institution (SANEDI), and this was duly done. SANEDI will, amongst others, be the champion for Energy Efficiency in the country, which will not only save energy but reduce the burden on households. In addition SANEDI will house South Africa's carbon Capture and Storage research and development as well as other energy research programmes. He refers to the different programmes and progress made.
Biofuels Industrial Strategy 2007.	A significant change to the draft Strategy is to adopt a short term focus (5 year pilot) to achieve a 2% penetration level of biofuels in the national liquid fuel supply, or 400 million litres pa. The target has been revised down from the 4.5% target that was initially proposed in the draft Strategy document. The following crops are proposed for the production of biofuels in the country: for Bioethanol, sugar cane and sugar beet and for Biodiesel sunflower, canola and soya beans. The exclusion of other crops and plants such as maize and Jatropha is based on the food security concerns. Further research is still needed to test usability of these in the country.	R&D platform will allow for the strengthening of local capacity and also leverage on international R&D work. The DST together with relevant stakeholders within the National Systems of Innovation (NSI) will facilitate the development and coordination of this work through a biofuels R&D plan that will focus on the total value chain. The research focus areas will include the investigation of alternative feedstock, development of energy crops (i.e. drought tolerance, high yield per ha, energy efficiency etc.) and improvement of known technologies whilst further developing, supporting and piloting the second generation technologies.

Legislation/Policy	Description of focus	Stated or derived SANEDI mandate
DOE strategic plan.	The Department's strategic plan seeks to deliver results along eight strategic objectives that include promoting energy security through reliable, clean, and affordable sources; universal access to energy sources, transformation of the energy sector, and strengthening the operations and management of the Department.	Centre for Carbon Capture and Storage under SANERI1. Clean Coal Technologies1.
DST 10 year innovation plan.	The grand challenge areas are: The Farmer to Pharma value chain to strengthen the bio-economy; Space science and technology; Energy security- the race is on for safe, clean, affordable and reliable energy supply, and South Africa must meet its medium-term energy supply requirements while innovating for the long term in clean coal technologies, nuclear energy, renewable energy and the promise of the "hydrogen economy"; Global-change science with a focus on climate change; and Human and social dynamics.	From an R&D perspective, it makes sense to position Saneri, Eskom, Sasol and various CEF subsidiaries to work together to advance clean coal technologies. For the long term, South Africa needs to strengthen the innovation chain in nuclear energy science. R&D to support conventional reactors in materials, safety, waste, reactor physics and so on must be planned and coordinated.
Energy Efficiency Policy & Strategy, DME 2004.	The vision of the strategy is to contribute to affordable energy for all, and to minimise the effects of energy usage on health & the environment. It is implemented through sector programmes.	Renewable Energy; Clean Fuels Programme, Energy Audits, Energy Management - The National Energy Research Institute will be funded to carry out a dedicated R&D programme for energy efficiency.
National Energy Efficiency Strategy of the RSA.	This Strategy allows for the immediate implementation of low-cost and no-cost interventions, as well as those higher-cost measures with short payback periods. These will be followed by medium-term and longer-term investment opportunities in energy efficiency. The Strategy acknowledges that there exists significant potential for energy efficiency improvements across all sectors of our national economy.	The South African National Energy Research Institute will be funded to carry out a dedicated programme of research and development for energy efficiency. The Strategy will support appropriate research and the possible adaptation of internationally available technologies and processes.
Energy Security Master Plan, DME.	The Master Plan is premised on achieving certain goals that have been set for the electricity sector. Due to the uncertainty over the planning horizon, some assumptions are made regarding demand projections and the economic outlook. After consideration of the Energy White Paper and the regulatory policy framework, the current electricity generation, transmission and distribution sectors are appraised, in terms of the challenges confronting these sectors.	Focused research and development will enable meeting technical performance and capacity expansion objectives. Electricity/energy-based technology development and innovation is imperative to productivity and growth of the country.

Legislation/Policy	Description of focus	Stated or derived SANEDI mandate
Gauteng Integrated Energy Strategy.	It aims to improve Gauteng’s environment, reduce its contribution to climate change and tackle energy poverty, whilst promoting economic development.	
Green Paper on Climate Change Response Strategy.	climate change response objective of – making a fair contribution to the global effort to achieve the stabilisation of greenhouse gas concentrations in the atmosphere at a level that prevents dangerous anthropogenic interference with the climate system; and effectively adapt to and manage unavoidable and potential damaging climate change impacts through interventions that build and sustain South Africa’s social, economic and environmental resilience and emergency response capacity.	Carbon capture and storage (research, development and demonstration programmes).
Industrial Policy Action Plan (IPAP) 2010/11 – 2012/13, published Feb 2010.		13.3 Green industries SWH; Wind; Photovoltaic power; Concentrated Solar Thermal power; Industrial Energy Efficiency; Water efficiency; Waste Management; Biomass and waste management; and Energy-efficient vehicles.
Integrated Resource Plan for Energy, 2010.	This Policy-Adjusted IRP is recommended for adoption by Cabinet and for subsequent promulgation as the final IRP. This proposal is a confirmation of the RBS in that it ensures security of supply. It is a major step towards building local industry clusters and assists in fulfilling South Africa’s commitments to mitigating climate change as expressed at the Copenhagen climate change summit. The Policy-Adjusted IRP includes the same amount of coal and nuclear new builds as the RBS, while reflecting recent developments with respect to prices for renewables. In addition to all existing and committed power plants (including 10 GW committed coal), the plan includes 9,6 GW of nuclear; 6,3 GW of coal; 17,8 GW of renewables; and 8,9 GW of other generation sources.	Section 7- Research Agenda for Next IRP Distributed generation, smart grids and off-grid generation Harnessing South Africa’s coal resource Decommissioning and waste management Technology options Small hydro; Regional hydro options (specifically Inga Biomass (including municipal solid waste and bagasse); Storage; and Energy efficiency demand side management. Vision for 2050. Uncertainty & Risk factors.

Legislation/Policy	Description of focus	Stated or derived SANEDI mandate
Integrated Energy Plan, 2003.	The Integrated Energy Plan outlines the direction and steps to be taken by South Africa to meet energy needs. The plan declares South Africa's continued reliance on coal, but also uses modeling to forecast which energy sources can be used most effectively to meet demand under four different scenarios. The plan advocates diversification of energy sources, including renewables, as well as fuel switching to improve energy efficiency.	
Long-Term Mitigation Scenarios, DEAT, October 2007.	Develops scenarios to mitigate greenhouse gas emission and forms the basis of South Africa's national mitigation policy direction.	The LTMS recognizes the importance of a low carbon future and provides an indication of the effort that has to be extended into changing the energy mix and economic activity of South Africa to achieve the required reduction in carbon.
Measurement and Verification Guideline for Energy Efficiency Certificates (DRAFT).	The SA Government intends to introduce tax incentives for companies that can prove energy efficiency savings. One of the primary requirements for companies to benefit from this tax incentive is that they need to make use of independent and registered Measurement and Verification (M&V) professionals that are certified by the Council of Measurement and Verification Professionals of South Africa (CMVPSA).	This Measurement and Verification Guideline for Energy Efficiency Certificates aim to provide background with regards to the M&V requirements surrounding the energy efficiency tax incentive scheme. It also provides a high-level M&V approach that should be followed by registered M&V professionals to issue the required supporting documentation that will be used by SANEDI to issue Energy Efficiency Certificates.
National Energy Act, 2008.	To ensure that diverse energy resources are available, in sustainable quantities and at affordable prices, to the South African economy in support of economic growth and poverty alleviation, taking into account environmental management requirements, international commitments and obligations and interactions amongst economic sectors; to establish institutions to be responsible for promotion of efficient generation and consumption of energy, energy modelling and planning, increased generation and consumption of renewable energies, energy research, contingency energy supply, holding of strategic energy minerals, adequate investment in, appropriate upkeep of and equitable access to energy infrastructure; to provide measures for the furnishing of certain data and information regarding energy demand, supply and generation; and to provide for matters connected therewith.	Chapter 4 focuses on the establishment of SANEDI. The institute is intended to: <ul style="list-style-type: none"> Promote energy efficiency in the economy; Increase the gdp per unit of energy consumed; Ensure energy resources used in optimal manner; Promote energy research and technology innovation; Increase players in the energy field; and Facilitate effective management of energy demand and its conservation.

Legislation/Policy	Description of focus	Stated or derived SANEDI mandate
National Research & Development Strategy- Aug 2002.	The objective of this strategy is to address these weaknesses in a profound but practical way. In particular, the approach is to apply internationally well-tested principles and systems that are adjusted to local realities and requirements. The strategy must be able to give expression to our national goals of economic development and improvement of quality of life for all citizens.	
National Energy Research, Development and Innovation Strategy (developed by DME, DST and stakeholders).		<p>Medium- to long-term energy-related research themes that would guide the management of Sanedi to appropriately position the company in terms of national priorities:</p> <ul style="list-style-type: none"> Energy infrastructure optimisation; Energy efficiency and demand-side management; The impact of energy use on the environment; The use of energy to stimulate socio-economic development; Cleaner fossil fuel use, including clean coal; Renewable energy; Alternative energy sources, including fuel cells and hydrogen; Energy planning and modelling; and Energy policy research.
NERSA Consultation Paper- Revision of Regulatory Rules for Energy Efficiency Demand Side Management (EEDSM) including Standard Offer Programme (SOP) June 2010.	Policy to support the Energy Efficiency and Demand Side Management Program for the Electricity Sector through the Standard Offer Incentive Scheme . Energy Efficiency & Demand-Side Rules incl Standard Offer Programme.	No specific reference in the document.
White paper on energy policy.	This White Paper has been written so as to clarify Government policy regarding the supply and consumption of energy for the next decade. The policy strengthens existing energy systems in certain areas, calls for the development of underdeveloped systems and demonstrates a resolve to bring about extensive change in a number of areas. It addresses international trade and co-operation, capacity building, and the collection of adequate information. The document is comprehensive, addressing all elements of the energy sector as practically as it can.	Government will consider the development of a system to prioritise national research funding into the three main research categories in order to address the medium to long-term research needs in the energy sector. This will consist of an integrated, multi-year, national, needs-driven, energy research strategy, developed from time to time by an experienced team of experts appointed by the Minister. This strategy will identify medium and long-term priority programmes and themes.

Legislation/Policy	Description of focus	Stated or derived SANEDI mandate
White Paper on Renewable Energy Policy, Aug 2002.	Formerly known as the White Paper on the Promotion of Renewable Energy and Clean Energy Development, this paper aims at informing the public and the international community of the Government's goals and objectives for the optimal use of renewable energy. Recognizing the importance of reducing the damage done to the environment by South Africa's reliance on electricity from coal and the need for diversification of energy resources, it commits the Government to a number of actions to ensure that renewable energy becomes a significant part of South Africa's energy portfolio over the next ten years. These measures include fiscal mechanisms, regulatory instruments, and standards to promote R&D and investment in renewables and educational programs to raise public awareness.	
White Paper on Renewable Energy, November 2003.	The main aim of this White Paper is to create the conditions for the development and commercial implementation of renewable technologies. Government will use a phased, managed and partnership approach to renewable energy projects that are well conceived and show the potential to provide acceptable social, environmental and financial returns for all investors and stakeholders. This will lessen the strain on fiscal resources and hold greater potential for successful implementation. The focus will be on delivery. An appropriate enabling environment towards full commerciality will nurture the technologies that are proven to best meet Government's policy objectives. Through this policy document Government is venturing into an entirely new area.	Mechanisms will be investigated to extend the operational support available from the Central Energy Fund to renewable energy programmes.
Electricity Regulation Act (412006): Electricity Regulations for Compulsory norms and Standards for Reticulation Services.	To establish a national regulatory framework for the electricity supply industry; to make the National Energy Regulator the custodian and enforcer of the national electricity regulatory framework; to provide for licences and registration as the manner in which generation, transmission, distribution, trading and the import and export of electricity are regulated; and to provide for matters connected therewith.	
National Climate Change Response White paper – Department of Environmental Affairs	The White Paper addresses response strategies to the mitigation of greenhouse gases as well as adaption to climate change.	Four of the eight national flagship projects pertain to the work of SANEDI – in particular the technical development of Carbon Capture and Storage Flagship Project is 100% the responsibility of SANEDI.

14.APPENDIX A: POLICY CONTEXT

To give effect to the strategic plan and meet the delivery objectives of the annual performance plan SANEDI has to structure itself in an effective and efficient manner so as to optimise its operations. The matrix structure is targeted for this purpose as it offers a dynamic structure that provides benefits specific to SANEDI's requirements, including:

- greater flexibility that allows employee movement across current functional / departmental boundaries;
- improved access to a diverse range of skills and perspectives;
- improved communication, coordination and information sharing across functional boundaries; and
- allows for broader experience and hence offers improved opportunities for professional development and career progression to employees.

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.

The table below shows the matrix structure in detail. The matrix is broken into SANEDI Operational functions and SANEDI programme areas. A detailed functions list is presented under each SANEDI support area.

Programme Activity Leader	Energy Efficiency	Smart Grids & Network Automation	Data Repository and Management (CESA)	Cleaner Fossil Fuels (inc SACCSS)	Cleaner Mobility	Renewable Energy	Working for Energy	Finance	Corporate Planning /Office of CEO	Procurement	HR	IT
Dr M Bipath.	Research requirements	Smart Grid integration.	Smart Grid local industry data provision.	IEP integration aspects.	Data Management	Smart Grid integration.	Smart Grid integration.	Budgeting for cost centre; Forecasting; and Responding to audit queries. Inputs for policies	Inputs for strategic plan, APP, quarterly reports, Annual Report, Risk Management and Management; and Obtain programme funding. Inputs for policies	Procurement of goods and services; Contract Management; and Obtain programme funding. Inputs for policies	Planning HR for portfolio Interviews Performance Assessments Discipline Motivation Instilling values of corporate governance Inputs for policies	IT needs Inputs for policies
B Bredenkamp.	NEE implementation; and Custodian of EE Centre and Hub.	EE Programme implementation.	EE database custodian.	EE database custodian	EE database custodian	Synergistic programme Development.	Energy efficiency programme Development.	Budgeting for cost centre; Forecasting; and Responding to audit queries. Inputs for policies	Inputs for strategic plan, APP, quarterly reports, Annual Report, Risk Management and Management; and Obtain programme funding. Inputs for policies	Procurement of goods and services; Contract Management; and Obtain programme funding. Inputs for policies	Planning HR for portfolio Interviews Performance Assessments Discipline Motivation Instilling values of corporate governance Inputs for policies	T needs Inputs for policies
Carel Snyman	Cleaner Mobility	Cleaner Mobility	Cleaner Mobility	IEP integration aspects.	Cleaner Mobility	Cleaner Mobility	Cleaner Mobility	Budgeting for cost centre; Forecasting; and Responding to audit queries. Inputs for policies	Inputs for strategic plan, APP, quarterly reports, Annual Report, Risk Management and Management; and Obtain programme funding. Inputs for policies	Procurement of goods and services; Contract Management; and Obtain programme funding. Inputs for policies	Planning HR for portfolio Interviews Performance Assessments Discipline Motivation Instilling values of corporate governance Inputs for policies	IT needs Inputs for policies
Dr T Mali.	Renewable Energy	Alternative fuels – clean energy.	Clean energy data provision.	Renewable Energy	Renewable Energy	Custodian of RECORD, REEEP and other programmes.	Clean Energy Programme Development.	Budgeting for cost centre; Forecasting; and Responding to audit queries. Inputs for policies	Inputs for strategic plan, APP, quarterly reports, Annual Report, Risk Management and Management; and Obtain programme funding. Inputs for policies	Procurement of goods and services; Contract Management; and Obtain programme funding. Inputs for policies	Planning HR for portfolio Interviews Performance Assessments Discipline Motivation Instilling values of corporate governance Inputs for policies	IT needs Inputs for policies

Programme Activity Leader	Energy Efficiency	Smart Grids & Network Automation	Data Repository and Management (CESAR)	Cleaner Fossil Fuels (inc SACCSS)	Cleaner Mobility	Renewable Energy	Working for Energy	Finance	Corporate Planning /Office of CEO	Procurement	HR	IT
Dr AD Surridge.			CCS, Coal, Gas data provision.	Custodian of CCS Centre.				Budgeting for cost centre; Forecasting; and Responding to audit queries. Inputs for policies	Inputs for strategic plan, APP quarterly reports, Annual Report, Risk Management Performance Reporting Inputs for policies	Procurement of goods and services; Contract Management'	Planning HR for portfolio Interviews Performance Assessments Discipline Motivation Instilling values of corporate governance Inputs for policies	IT needs Inputs for policies
D Mahuma.	Integration into WFE programme.		WFE data provision.			Integration into WFE programme.	Custodian of WFE programme.	Budgeting for cost centre; Forecasting; and Responding to audit queries. Inputs for policies	Inputs for strategic plan, APP quarterly reports, Annual Report, Risk Management Inputs for policies	Procurement of goods and services ; Contract Management;	Planning HR for portfolio Interviews Performance Assessments Discipline Motivation Instilling values of corporate governance Inputs for policies	IT needs Inputs for policies
C Snyman.	Transport Energy Efficiency (Research and needs analysis).	Custodian of Cleaner Mobility	Transport data provision.			Uptake of cleaner fuels.	Transport Related programme development.	Budgeting for cost centre; Forecasting; and Responding to audit queries.	Inputs for strategic plan, APP quarterly reports, Annual Report, Risk Management People Management.	Procurement of goods and services ; Contract Management; and Obtain programme funding.	Planning HR for portfolio Interviews Performance Assessments Discipline Motivation Instilling values of corporate governance Inputs for policies	IT needs Inputs for policies
L Manamela.	Finance support.	Finance support.	Finance Support.	Finance support.		Finance support.	Finance support.	AFS Management accounts Financial Reporting Budgeting Forecasting Responding to audit queries ENE Financial Monitoring and Evaluation Financial policies and control.	Inputs for strategic plan, APP quarterly reports, Annual Report, Risk Management Inputs to policies	Procurement Chair.	Planning HR for portfolio Interviews Performance Assessments Discipline Motivation Instilling values of corporate governance Inputs for policies	IT needs Inputs for policies

Programme Activity Leader	Energy Efficiency	Smart Grids & Network Automation	Data Repository and Management (CESA)	Cleaner Fossil Fuels (inc SACCCS)	Cleaner Mobility	Renewable Energy	Working for Energy	Finance	Corporate Planning /Office of CEO	Procurement	HR	IT
D Govender.	Corporate Support.	Corporate Support.	Corporate Support.	Corporate Support.	Corporate Support.	Corporate Support.	Corporate Support.	Budgeting for cost centre; Forecasting; and Responding to audit queries.	Strategic plan APP, Performance Management / reporting Annual Report, Risk Management, People Management, Responding to audit queries, Board/ BARC inputs, Procurement of goods and services.	Procurement Committee.	Planning HR for portfolio Interviews Performance Assessments Discipline Motivation Instilling values of corporate governance Inputs for policies	IT needs Inputs for policies
B Bredenkamp.	Communications and Marketing.	Communications and Marketing.	Communications and Marketing.	Communications and Marketing.	Communications and Marketing.	Communications and Marketing.	Communications and Marketing.	Budgeting for cost centre; Forecasting; and Responding to audit queries. Inputs to policies	Inputs for strategic plan, APP quarterly reports, Annual Report, Risk Management Inputs to policies	Procurement of goods and services.	Planning HR for portfolio Interviews Performance Assessments Discipline Motivation Instilling values of corporate governance Inputs for policies	IT needs Inputs for policies
Dr. M Bipath (GIO)	IT support – software and hardware	IT support – software and hardware	IT support – software and hardware	IT support – software and hardware	IT support – software and hardware	IT support – software and hardware	IT support – software and hardware	IT support – software and hardware Budgeting for cost centre; Forecasting; and Responding to audit queries	IT support – software and hardware Inputs for strategic plan, APP quarterly reports, Annual Report, Risk Management People Management.	IT support – software and hardware Procurement of IT hardware and software	Planning HR for portfolio Interviews Performance Assessments Discipline Motivation Instilling values of corporate governance Inputs for policies	IT needs Inputs for policies Management of IT staff

16.1. ADVANTAGES OF THE MATRIX STRUCTURE

The matrix arrangement attempts to retain the benefits of both structures (functional organisation and project team structure). It coordinates resources in a way that applies them effectively to different projects. Staff can still retain membership on teams and their functional department colleagues.

Efficient Information Exchange

The matrix arrangement can lead to an efficient exchange of information. Departments work closely together and communicate with each other frequently to solve issues. Efficient lines of communication enhance productivity and allow for quick decision-making. The specialized information exchange allows managers to respond quickly to the needs of clients and the organisation.

Increased Motivation

In an ideal situation, the matrix structure encourages a democratic leadership style. This style incorporates the input of team members before managers make decisions. The ability to contribute valuable information before decisions are made leads to employee satisfaction and increased motivation. In a matrix structure, each employee brings his expertise to the table. Managers are involved in the day-to-day operations, which allow them to make decisions through the viewpoint of employees.

16.2. DISADVANTAGES OF THE MATRIX STRUCTURE

Internal Complexity

A disadvantage of the matrix structure is that it can result in internal complexity that needs to be managed effectively. Some employees may become confused as to who their direct supervisor is. The dual or multiple authority and communication problems may cause division among employees and managers. Miscommunication and ineffective managing can result in employee dissatisfaction and low morale. Prolonged issues may cause an organisation to experience high employee turnover.

