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South African National Energy
Development Institute (SNC) Ltd.



SANEDI 2018/19 ANNUAL REPORT

ENERGY INNOVATION FOR LIFE



The Act provides in detail for SANEDI's Mandate



The National Energy Act, 2008 (Act No. 34 of 2008), Section 7 (2) gave effect to SANEDI's existence and provides for its primary mandate and specific responsibilities.



The Act provides for SANEDI to direct, monitor and conduct **energy research and development**, promote energy research and technology **innovation** as well as undertake measures to promote **energy efficiency** throughout the economy.

SANEDI's activities contribute across the entire energy landscape, to all of society



Cleaner Fossil Fuels

Carbon capture and storage
Carbon utilisation
Clean coal technologies
Hybrid systems



Smart Grids

Municipal / ESI sustainability
Integration of distributed and variable generation sources
Support for advanced appliances / electric vehicles



Cleaner Mobility

Electric vehicles
Clean fuels (NLG, CNG, etc.)
Public transport systems
Pedestrian / cycling enabled



Data and knowledge management

National energy data repository
Energy modelling skills and capacity
Analysis and modelling
Decision and planning support tools



Renewable Energy

Solar power
Wind energy
Waste to energy
Wave and ocean current
Storage
Skills development



Working for Energy

Clean energy solutions for rural and peri urban areas
Employment creation
Research



Energy Efficiency

Improved resource efficiency
Technical assistance facility
Industry development
Tax incentives





SANEDI's strategic direction cascades well from the vision through to the programme level.

SANEDI defined strategic direction

Vision	Mission	Strategic outcome oriented goals	Strategic Objectives	Programme
Sustainable living for growth and prosperity in Africa	Using applied energy research and resource efficiency to develop innovative, integrated solutions that will catalyse growth and prosperity	A resilient, efficient, effective and enabling delivery environment that is aligned to / complies with all statutory requirements	An effectual internal control environment.	Corporate Governance and Administration
			A team that is adequately staffed, adequately skilled and trained and adequately representative of the national demographics.	
			Effective risk management on risk areas affecting SANEDI.	
			Effective and comprehensive stakeholder management.	
		Energy innovation, knowledge and skills for a less carbon intensive, more environmentally sustainable, affordable and efficient energy system	Energy related support, information and advice to inform high confidence energy planning, decision-making and policy development (including knowledge custodianship).	Energy Efficiency
		Accelerated adoption of clean energy solutions to optimise the use of finite resources and the transition to a sustainable low carbon future	Applied Energy Research, Development and Innovation	



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Performance Information

ENERGY INNOVATION FOR LIFE

Performance for 2018/19



 **SANEDI achieved 83% of its performance indicators in the 2018/19FY.**

Total number of targets for the year	52
Number of targets achieved	43
Number of targets not achieved	9
Percentage performance	83%








SANEDI also had no material findings on the Auditor's report with respect to the Performance information as reported.

KPI-based performance by programme: Corporate Governance and Administration



 Corporate Governance and Administration achieved 86% of its performance indicators in the 2018/19FY.

86% of KPI's achieved

Strategic Objective(s)	Performance Indicator	Performance 2018/19
An effective and efficient internal control environment.	<ul style="list-style-type: none"> Unqualified audit. 	
	<ul style="list-style-type: none"> % implementation of the ICT plan 	
A team that is adequately staffed, adequately skilled and trained and adequately representative of the national demographics.	<ul style="list-style-type: none"> Vacancy rate maintained within acceptable range. 	
	<ul style="list-style-type: none"> Percentage of personnel trained as per Workplace Skills Plan. 	
	<ul style="list-style-type: none"> Percentage deviation from employment equity targets maintained within acceptable range. 	
Effective risk management on risk areas affecting SANEDI	<ul style="list-style-type: none"> Percentage critical strategic and operational risk factors are identified and mitigated. 	
Effective and comprehensive stakeholder management.	<ul style="list-style-type: none"> Percentage implementation of stakeholder engagement plan (SEP). 	

Key highlights

- Recruitment and filling of posts was frozen pending organisational review.
- Strong control environment with focus on continuous improvements.
- Maintained an unqualified for another financial year.

Key

-  Achieved
-  Not achieved

KPI-based performance by programme: Cleaner Fossil Fuels



Cleaner Fossil Fuels achieved 83% of its performance indicators in the 2018/19FY

	Strategic Objective(s)	Performance Indicator	Performance 2018/19
Cleaner Fossil Fuels	1. Energy-related support, information and advice to inform high confidence energy planning, decision-making and policy development	▪ Number of energy solutions assessed.	■
		▪ Annual energy industry insight publication.	■
		▪ Number of current energy-related datasets maintained.	■
	2. Accelerated transformation to a less energy and carbon intensive economy	▪ Number of industry knowledge sharing events and platforms to promote energy-related market/industry development.	■
		▪ Number of recipients of energy-related training facilitated by SANEDI.	■
		▪ Number of energy-related research students / contracted researchers supported (e.g. bursaries, non-bursaries, contract opportunities, infrastructure support, etc.)	■

83% of KPI's achieved

Key highlights

- Pilot CO2Monitoring Project completed
- Over 600 recipients of energy related training facilitated
- Mineralisation of CO2as a supplementary to storage
- Survey of industry requirements to implement carbon capture and storage
- Progress on stakeholder engagement for Pilot Storage Project

Key
■ Achieved
■ Not achieved

KPI-based performance by programme: Renewable Energy



Renewable Energy achieved 78% of its performance indicators in the 2018/19FY

	Strategic Objective(s)	Performance Indicator	Performance 2018/19
Renewable Energy	1. Energy-related support, information and advice to inform high confidence energy planning, decision-making and policy development	▪ Number of energy solutions assessed.	Green
		▪ Annual energy industry insight publication.	Red
		▪ Number of current energy-related datasets maintained.	Green
		▪ Number of relevant data analyses and reports drawn from available datasets.	Green
	2. Accelerated transformation to a less energy and carbon intensive economy	▪ Number of industry roadmaps, sector development plans and industry support tools developed to promote energy-related market/industry development.	Green
		▪ Number of industry knowledge sharing events and platforms hosted to promote energy-related market/industry development.	Green
		▪ Number of commercially viable clean-tech solutions progressed to active business incubation and/or deployment.	Green
		▪ Number of recipients of energy-related training facilitated by SANEDI.	Green
		▪ Number of active researchers contributing to energy research leadership enabled by a SANEDI programme.	Red

78% of KPI's achieved

Key highlights







- REEEP municipal EE water works implemented EE measures in 2 water treatment systems
- WASA II hosted midterm workshop to showcase next phase data
- RECORD implemented 2 Solar thermal systems for the military
- SANEDI/SOLTRAIN launch of biggest RE district heating system in Africa
- MLT inverted technology commercialised

Key
■ Achieved
■ Not achieved

KPI-based performance by programme: Smart Grids



Smart Grids achieved 100% of its performance indicators in the 2018/19FY

Smart Grids	Strategic Objective(s)	Performance Indicator	Performance 2018/19
	1. Energy-related support, information and advice to inform high confidence energy planning, decision-making and policy development	<ul style="list-style-type: none"> Number of energy solutions assessed. 	
		<ul style="list-style-type: none"> Annual energy industry insight publication. 	
	2. Accelerated transformation to a less energy and carbon intensive economy	<ul style="list-style-type: none"> Number of industry roadmaps, sector development plans and industry support tools developed to promote energy-related market/industry development. 	
		<ul style="list-style-type: none"> Number of industry knowledge sharing events and platforms hosted to promote energy-related market/industry development. 	
		<ul style="list-style-type: none"> Number of recipients of energy-related training facilitated by SANEDI. 	
		<ul style="list-style-type: none"> Number of active researchers contributing to energy research leadership enabled by a SANEDI programme. 	

100% of KPI's achieved

Key highlights

- International collaboration with ISGAN/IEA/CEM
- 10 pilot projects with municipalities successfully closed
- Programme outputs:
 - Smart metering how to guide
 - Policy recommendation
 - Lessons learned
 - Business case methodology
 - Case studies
 - Programme closeout report





Key  Achieved  Not achieved

KPI-based performance by programme: Cleaner Mobility



- Cleaner Mobility achieved 75% of its performance indicators in the 2018/19FY

75% of KPI's achieved

Strategic Objective(s)	Performance Indicator	Performance 2018/19
1. Energy-related support, information and advice to inform high confidence energy planning, decision-making and policy development	<ul style="list-style-type: none"> Number of energy solutions assessed. 	
	<ul style="list-style-type: none"> Annual energy industry insight publication. 	
2. Accelerated transformation to a less energy and carbon intensive economy	<ul style="list-style-type: none"> Number of industry knowledge sharing events and platforms hosted to promote energy-related market/industry development. 	
	<ul style="list-style-type: none"> Number of recipients of energy-related training facilitated by SANEDI. 	

Smart Grids

Key highlights

- Demonstration: Smart Mobility for Cities – Cleaner Mobility Week
- Study Report: Potential for local manufacturing of EVs and NMT
- Study Report: Macroeconomic study on EV in South Africa
- Study Report: Case Study on e-Bus Pilot Project
- Demonstration: Installation of 1 solar powered EV charging Station at City of Tshwane
- Supported the DoT in Developing the Green Transport Strategy



Key  Achieved  Not achieved

KPI-based performance by programme: Working for Energy



Working for Energy achieved 57% of its performance indicators in the 2018/19FY

	Strategic Objective(s)	Performance Indicator	Performance 2018/19
Renewable Energy	1. Energy-related support, information and advice to inform high confidence energy planning, decision-making and policy development	Number of energy solutions assessed.	Achieved
		Annual energy industry insight publication.	Achieved
		Number of relevant data analyses and reports drawn from available datasets.	Achieved
	2. Accelerated transformation to a less energy and carbon intensive economy	Number of industry roadmaps, sector development plans and industry support tools developed to promote energy-related market/industry development.	Achieved
		Number of industry knowledge sharing events and platforms to promote energy-related market/industry development.	Not achieved
		Number of recipients of energy-related training facilitated by SANEDI.	Not achieved
		Number of energy-related research students /contracted researchers supported (e.g. bursaries, non-bursaries, contract opportunities, infrastructure support, etc.)	Not achieved

57% of KPI's achieved

Key highlights

- Launched 2x Greened Early Childhood Development Centres in Kwazulu-Natal
- Refined work on 2x Biogas digester systems in Mhinga in Limpopo using animal waste as feedstock;
- Partnership on refinement and research on 26x Biogas digester systems in Ndwedwe-KZN with University of KZN.
- Continuous learning and refining work on 4x Greened Primary schools in Sharpeville Gauteng;
- Commissioned and launched 1x Biogas digested system at the South African Riders for Disability Association- Ruimsig-Gauteng.
- Supported the institutionalisation of the Expanded Public Works in the energy sector.
- Developed a Micro Digester Guidelines Document for South Africa.
- Developed the research report on (Assessment of Viability and Implementation Options for Renewable Energy in Rural and Low Income Urban Areas in South Africa).

Key
■ Achieved
■ Not achieved

KPI-based performance by programme: Data and Knowledge Management



Data and Knowledge Management achieved 100% of its performance indicators in the 2018/19FY

		Strategic Objective(s)	Performance Indicator	Performance 2018/19
Data and Knowledge Management	1. Energy-related support, information and advice to inform high confidence energy planning, decision-making and policy development	▪ Number of current energy datasets maintained..	■	
		▪ Number of relevant data analyses and reports drawn from available datasets.	■	
	2. Accelerated transformation to a less energy and carbon intensive economy	▪ Number of industry roadmaps, sector development plans and industry support tools developed to promote energy-related market/industry development.	■	
		▪ Number of industry knowledge sharing events and platforms hosted to promote energy-related market/industry development.	■	
		▪ Number of recipients of energy-related training facilitated by SANEDI.	■	

100% of KPI's achieved

Key highlights

- SANEDI Projects presented at the international energy workshop
- 3 bursaries
- Open energy database maintained
- SATIMES model maintained
- Transport demand studies completed
- Hydrogen fuel cell study completed
- 5 papers submitted for publication

Key









■ Achieved

■ Not achieved

KPI-based performance by programme: Energy Efficiency



Energy efficiency achieved 88% of its performance indicators in the 2018/19FY

Energy Efficiency	Strategic Objective(s)	Performance Indicator	Performance 2018/19
	1. Accelerated adoption of EE solutions to optimise the use of finite resources.	<ul style="list-style-type: none"> Number of current energy datasets maintained. 	
		<ul style="list-style-type: none"> Annual energy industry insight publication. 	
		<ul style="list-style-type: none"> Number of industry knowledge sharing events and platforms to promote energy-related market/industry development. 	
		<ul style="list-style-type: none"> Number of relevant data analyses and reports drawn from available EE datasets. 	
		<ul style="list-style-type: none"> Number of relevant data analyses and reports drawn from available EE datasets. 	
		<ul style="list-style-type: none"> Number of industry roadmaps, sector development plans and industry support tools developed to promote EE market/industry development. 	
		<ul style="list-style-type: none"> Number of recipients of EE training facilitated by SANEDI. 	
		<ul style="list-style-type: none"> Number of energy-related research students /contracted researchers supported (e.g. bursaries, non-bursaries, contract opportunities, infrastructure support, etc.) 	

88% of KPI's achieved

Key highlights

- The increase in 12L tax incentive rebate resulted in a large uptake of applications and a decision by National Treasury to extend the incentive for another 3 years.
- The energy-savings data from the 12L tax incentives is now providing valuable input to other government activities..
- The Cool Surfaces research programme has been awarded with an international prize of \$100 000.00



Key  Achieved  Not achieved

Challenges and Opportunities



	Governance	Structural	Funding
Challenges	<ol style="list-style-type: none"> 1. The National Energy Act prescribes the composition of Board members 2. Only 2 non – independents thus no sufficient allowance for industry experts 3. Vacancies take time to be filled because of government processes 4. Lack of strategic direction from some ministries to representatives 5. No representatives from Transport 6. CEO vacancy (Imminent) 	<ol style="list-style-type: none"> 1. Organisational Review underway to refocus the organisation 2. Strategic sessions with board and various stakeholders to align SANEDI 's focus to National Priorities 3. Impact assessment 	<ol style="list-style-type: none"> 1. SANEDI is still on an establishment grant, and grossly underfunded 2. Other entities, with funding encroaching o SANEDI's Mandate.
Opportunities	<ol style="list-style-type: none"> 1. The National Energy Act can be revised to re-look at the composition of the Board 2. Provision can be made for more independents and industry Experts 3. Alignment of the Act to best practice with respect to corporate governance 	<ol style="list-style-type: none"> 1. Increased impact with a Focused strategy 2. Better support for government priorities, e.g. smart cities 3. Fit purpose operating model and structure 	<ol style="list-style-type: none"> 1. Alternative sources of funding for SANEDI e.g. Levy, green fund 2. Increased collaboration with other organs of state and National departments 3. Greater collaboration with development agencies



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Financial Statements

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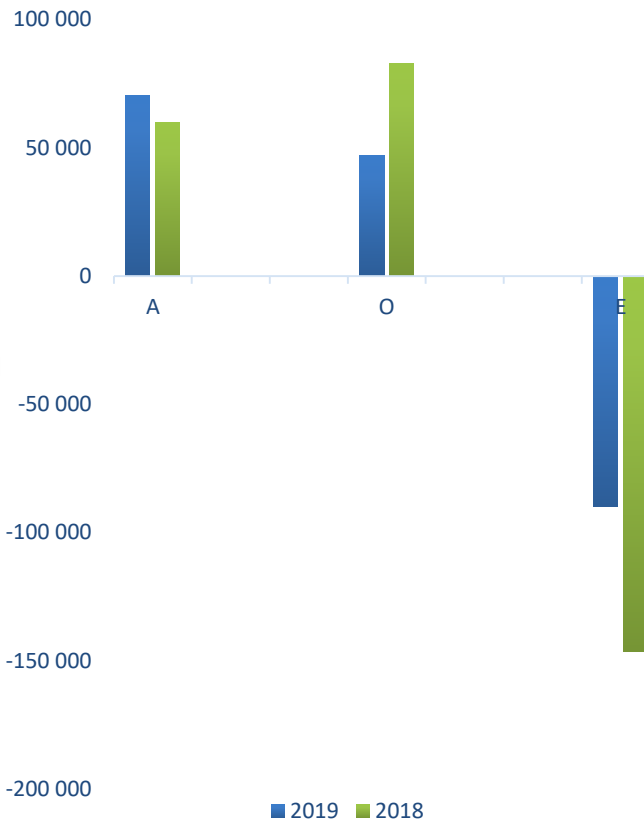
Financial Performance



Financial Position

1. SANEDI is funded through an allocation from National Treasury through the DMRE
2. **A**= Total revenue amounted to R117 million with of R70 million being the allocation from the National Treasury.
3. **O**=Leveraged funds for the financial year amounted to 40% of total income reported (58% in 2018).
4. **E**=Expenses Amounted to 90 million declined by 38% from the previous year as multi year projects run to a close in 2019.

SANEDI FINANCIAL PERFORMANCE



Future Budget estimates

- Allocation is expected to increase by 5,5% in 2020
- Funding from World bank \$23 secured for Carbon Capture and Storage
- About R 30 million per annum for 3 years expected from the NAMA facility for Energy Efficiency project(Measurement and verification)

Financial Position

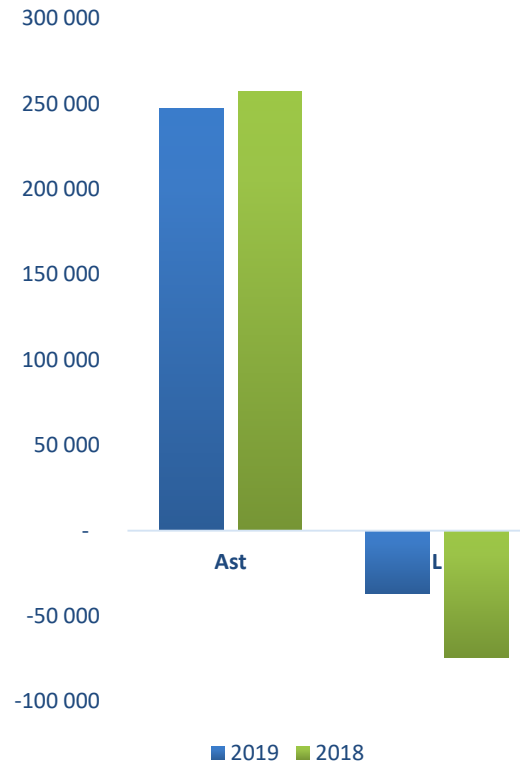


Financial Position

Financial performance

1. **Ast** = Assets exceeded liabilities at 31 March 2019 with a cash balance of R 230 million.
2. Cash balance as disclosed is mostly.
3. **L** = Liabilities related to donor funding for projects, amounted to R37 million.

SANEDI FINANCIAL POSITION



Future Budget estimates

- Financial Statements are unqualified with findings



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GOVERNANCE

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SANEDI Board of Directors



Name	Designation	Date appointed/ re- appointed	Resigned/ Term ended	Qualifications	Board ¹⁸ Directorships	Other committees or task teams ¹⁹	No. of meetings ²⁰ attended
Mr Nkululeko Buthelezi	Interim Chairperson, and FinCo Chair	01-Dec-16	N/A	Dip Scientific Computing and Software Engineering, Dip Management, Adv Dip Project Management, Post Grad Dip Management, MBA	None	BARC, FinCo, SJ&E	Board: 5 Committee: 2
Mr Mlondolozu Mkhize	Independent Director, and HR & Rem Chair	01-Dec-16	N/A	BA Soc Sci		BARC, HR&R, SJ&E	Board: 0 Committee: 0
Ms Phuthanang Motsielwa	Independent Director, and BARC Chair	20-Aug-13	N/A	B Acc (CA)(SA), RA	1. PSTM Auditors Inc 2. Director African Women Chartered Accountants 3. Setshoghe Foundation	BARC, FinCO, SJ&E	Board: 5 Committee: 1
Mr Mmboneni Muofhe	Director, and Projects Committee Chair	01-Dec-16	N/A	BSc (Hons), MSc, MBA	1. The Innovation Hub 2. Biovac	Proj, SJ&E	Board: 2 Committee: 0
Dr Rebecca Maserumule	Alternate Director	23-Oct-13 01-Dec-16	N/A	PhD, BSc	None	Alternate	Board: 2 Committee: 1
Ms Deborah Ramalope	Director	01-Dec-16	N/A	BSc (Hon), MSc, MBL	None	Proj	Board: 2 Committee: 1
Ms Nomawethu Qase	Director	01-Dec-16	N/A	M Phil (Energy Studies), Post Grad Dip Management, B Soc Sc (Hons)	None	HR & Rem, Proj	Board: 3 Committee: 2
Mr Thabang Audant	Alternate Director	01-Aug-17	N/A		None	Alternate	Board: 1 Committee: 0
Mr Gerhard Fourie	Director	01-Dec-16	N/A	Diploma Mech Eng, B Com Economics, MBA	None	Proj, FinCo	Board: 4 Committee: 1

SANEDI Board Committees



1. Vacancies on the Board negatively impacted the functioning of Board Committees
2. Board however managed to takeover most of the responsibilities.

Committee	No. of meetings held	No. of members	Name of members
Board Audit and Risk Committee (BARC)	1	2 ²¹	Ms Phuthanang Motsielwa (Chair), Mr Mlondolozzi Mkhize, and Mr Nkululeko Buthelezi (resigned).
Human Resources and Remuneration Committee	1	3	Mr Mlondolozzi Mkhize (Chair), Ms Nomawethu Qase, Mr Nkululeko Buthelezi, and Dr Ingrid Tufvesson (resigned from Board).
Projects Committee	1	3	Mr Mmboneni Muofhe (Chair), Ms Deborah Ramalope, Dr Ingrid Tufvesson (resigned from Board), and Mr Gerhard Fourie.
Finance and Investment Committee	1	3	Mr Nkululeko Buthelezi (Chair), Ms Phuthanang Motsielwa, Dr Ingrid Tufvesson (resigned from Board), and Mr Gerhard Fourie.
Social Justice and Ethics Committee	0	4	Dr Ingrid Tufvesson (resigned from Board), Ms Phuthanang Motsielwa, Mr Nkululeko Buthelezi, Mr Mlondolozzi Mkhize, and Mr Mmboneni Muofhe.



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HUMAN RESOURCES

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Employment Equity Status



- At the end of the 2017/18 financial year, SANEDI had 24 male (45%) and 29 female (55%) staff members employed.

Levels	MALE							
	African		Coloured		Indian		White	
	Current	Target	Current	Target	Current	Target	Current	Target
Top Management	-	-	-	-	-	-	-	-
Senior Management	1	-	-	-	1	-	2	-
Professional qualified	5	-	1	-	3	-	2	-
Skilled	6	-	-	-	1	-	-	-
Semi-skilled	1	-	-	-	-	-	-	-
TOTAL	13	-	1	-	5	-	4	-

Levels	FEMALE							
	AFRICAN		COLOURED		INDIAN		WHITE	
	Current	Target	Current	Target	Current	Target	Current	Target
Top Management	2	-	-	-	-	-	-	-
Senior Management	-	-	-	-	-	-	-	-
Professional qualified	8	-	-	-	-	-	2	-
Skilled	15	-	1	-	1	-	1	-
Semi-skilled	3	-	-	-	-	-	-	-
TOTAL	28	-	1	-	1	-	3	-



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**THANK
YOU**