



**sanedi**

South African National Energy  
Development Institute (SOC) Ltd.



# **SANEDI 2021/22 ANNUAL REPORT PRESENTATION**

**ENERGY INNOVATION FOR LIFE**

# Executive summary

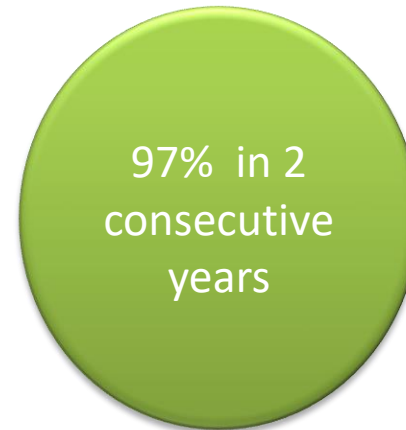


The financial year ended 2021/22 was a year characterized by several successes for the organization:

## International Awards and industry Accolades



## Achievement of Targets



## Clean Audit Outcome






Board busy reviewing the strategy to further align with National Priorities

# Strategic Programmes and Outcomes



## Medium Term Strategic Framework 2020 – 2025

Thematic Areas	Strategic Outcome	SM	DKM	RE	CM	CFF	EE
 <b>Climate change &amp; Decarbonisation</b>	Smart Grid systems piloted for smart cities	✓					
	Energy transition expertise and competent building enabled	✓	✓	✓	✓	✓	
 <b>Service delivery within municipal environment</b>	Demonstration of GHG emissions reduction in line with national commitments	✓	✓	✓			✓
	An awareness for the technologies to be used in the transition process	✓	✓	✓	✓	✓	
 <b>Information, knowledge &amp; Technology Convergence</b>	Evidence based planning, resource allocation and decision making	✓	✓	✓			✓
	Clean Municipality Fleet, Public and Private Transport				✓		

SM-  
Smart Grids

DKM-  
Data & Knowledge  
Management

RE- Renewable  
Energy

CM-Cleaner  
Mobility

CFF- Cleaner  
Fossil Fuels

EE- Energy  
Efficiency



# PROGRAMME 1: Administration



## Overall 97% Achievement

Programme 1:  
Administration

100%

Programme 2: Applied  
Energy Research

100%

Programme 3:  
Energy Efficiency

86%

## Highlights: Clean administration

Programme 1:  
Administration

Unqualified Audit Outcome

42 % staff complement Youth  
68 % staff complement women  
33,3 % Women in Senior Positions  
including Interim CEO/( now CFO)  
4,5% Vacancy rate  
85% Implementation of Skills  
development plan

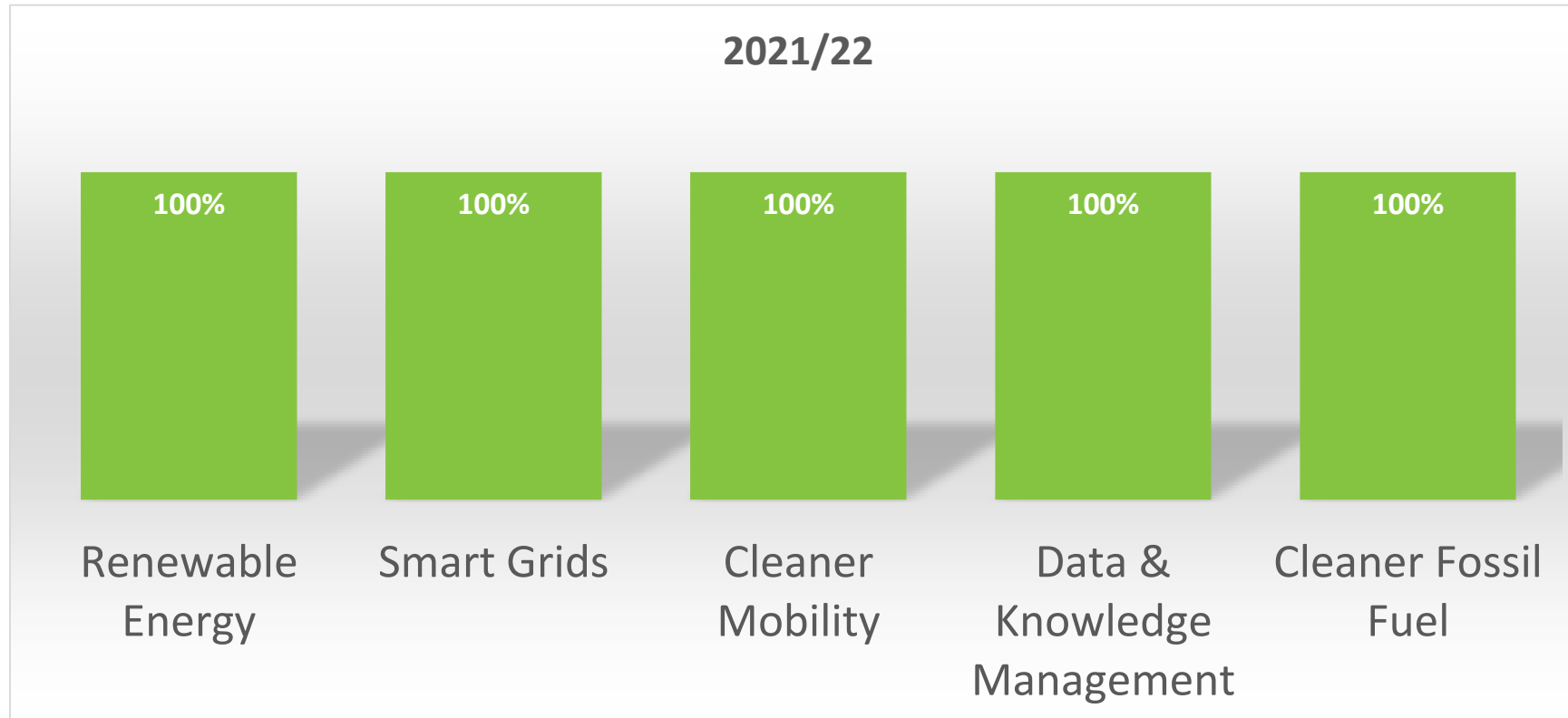
100% all risk managed per strategy  
and IT strategy Implemented

Implemented Stakeholder  
engagement plan as per strategy



# **PROGRAMME 2 & 3: APPLIED ENERGY RESEARCH AND DEVELOPMENT & ENERGY EFFICIENCY**

# Summary of Programme 2 performance



**Consistent results  
over the past 2  
year**

**97% of all targets  
achieved**

**High performance  
culture**

**Energy Efficiency 86%**

# APP Targets achieved



## Targets achieved

Outcome Indicators	SM	DKM	RE	CM	CFF	EE	Total
Number of energy solutions assessed Including EE	4		4	1	1	2	12
Number of energy-related knowledge sharing events			15	1			16
Number of recipients of energy related training facilitated.		60	201	11			272
Number of annual Energy industry status report	1	1	1	1			4
Minimum number of energy-related datasets maintained per annum.			2			2	4
Number of policy support instruments			1	1			2

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# APP Targets achieved



## Targets achieved

### Outcome Indicators

	SM	DKM	RE	CM	CFF	EE	Total
Number of energy-related research students / contracted researchers supported		1	1				2
Number of National energy programmes for which data is available / captured.		4					4
Sector Reports (automotive, pulp and paper, residential sectors).		3					3
Fully functional Data and Knowledge Management (DKM) facility in-house within SANEDI.		1					1
Number of engagements with key Stakeholders relating to data access.		8					8

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Efficiency

# APP Targets achieved



Outcome Indicators	Targets achieved						Total
	SM	DKM	RE	CM	CFF	EE	
Number of training modules relating to data.		2					2
Number of industry roadmaps, sector development plans and industry support tools developed	1						1
<b>Number of EE solutions implemented.</b>						39	39

SM- Smart Grids	DKM- Data & Knowledge Management	RE- Renewable Energy	CM- Cleaner Mobility	CFF- Cleaner Fossil Fuels	EE- Energy Efficiency
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# APP Targets achieved



Outcome Indicators	Targets achieved						Total
	SM	DKM	RE	CM	CFF	EE	
GHG emissions reduced (tonnes CO <sub>2</sub> )						194 tonnes	194 tonnes
Area coated (m <sup>2</sup> ) and GHG emissions reduced (tonnes CO <sub>2</sub> )						86,100 m <sup>2</sup>	86,100 m <sup>2</sup>
Number of EE performance certificates issued						24	24
Functional database						1	1

SM- Smart Grids	DKM- Data & Knowledge Management	RE- Renewable Energy	CM- Cleaner Mobility	CFF- Cleaner Fossil Fuels	EE- Energy Efficiency
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# Achievements and deliverables






## Renewable Energy

- In partnership with DoD :
  - Deployed two biogas plants at the two military bases using kitchen waste to produce Gas (**Replaced LPG gas**)
  - Demonstration of Water Heating project at Air Force Base Hoedspruit (AFBH), through (SOLTRAIN) Solar
  - Training of Military staff to operate biogas plants and maintain the Solar heating systems
  - Deployed 120 000m<sup>2</sup> of cool surfaces paint



# Achievements and deliverables



 <b>Activities</b>	 <b>Potential Savings (kwh)</b>	 <b>CO<sub>2</sub> Off-set</b>
<b>2x 1500L hot water energy saving systems</b>	<b>9,100,000 kwh</b>	<b>8,800 tones</b>
<b>2x 6000L systems at demand order of magnitude</b>	<b>116,000kWh</b>	<b>27 tones</b>
<b>120 000m<sup>2</sup> Building envelope protection and energy savings</b>	<b>187,000,000 kwh</b>	<b>182,000 tones</b>

## Other Deliverables Included :

- CSIR /SANEDI Thermal Lab
- SANEDI/NERSA Plaswen prototype
- Micro Digester
- Wind Atlas

*These are potential energy savings that stand to be achieved of the life of the project . National roll out has the potential to release pressure from the national grid.*

# Achievements and deliverables



## Challenges

**Financial Distress  
(Revenue)**

**High  
Maintenance Cost**

**Aging  
Infrastructure**

**Operational  
Inefficiency**

**Customer  
Dissatisfaction**

**High  
Electricity Tariffs**

**Smart  
Grids**



## Interventions

**Smart Revenue  
System Design Study**

**Electric Transportation on  
Power Distribution  
Network**

**Smart Asset Management  
– Framework, Roadmap &  
Tool-box**



## Beneficiaries

All municipalities, especially  
distressed munics having more  
priority

Municipal Electricity  
Distribution Departments

Service Providers implementing  
Asset Management within munics

National Treasury's  
Intergovernmental  
Relations Public Finance  
Division



## Impact

Sustainable munics  
revenue collection  
mechanism & tariff  
design

Strategies to manage  
the penetration of EV's  
on the grid

MS Excel based tool for  
calculating asset  
management maturity levels

Improved service delivery with  
the reticulation of electricity

# Data and Knowledge Management



## Activities



## Potential Savings (kWh)



## CO<sub>2</sub> Off-set




## Programmes/Projects

Programmes/Projects	Activities	Potential Savings (kWh)	CO <sub>2</sub> Off-set
EU GBS wastewater treatment plants (WWTPs)	14 WWTP Assessed	10,224,043.44 kWh	11,042 tones
Solar PV System within WWTP	14 250 kW – 800kW Grid-tie PV Systems	15,366,135.76 kWh	16,595 tones
EU GBS Buildings	18 Public Buildings Assessed	81,936,473 kWh	88,491 tones
Pulp & Paper	11 Paper Mills assessed	579,616,666 kWh	625,985 tones
Automotive Industry	7 Light Duty Vehicles	87,763,333.33 kWh	94,784 tones

### Note:

Three interventions were explored within the wastewater treatment plants, namely; Aeration units, pumps and electric motors (Energy Drivers).

# Data and Knowledge Management

<u>Programmes/Projects</u>	 <u>Activities</u>	 <u>Youth</u>	 <u>Women</u>
EU GBS Wastewater Treatment Plants	<b>28</b> Fieldworkers employed	<b>27</b>	<b>15</b>
	<b>3</b> Data Analysts employed	<b>3</b>	<b>3</b>
EU GBS Public Buildings	<b>46</b> EPC Practitioners	<b>46</b>	<b>29</b>
	<b>2/29</b> SANEDI/Industry Energy Practitioners employed	<b>2</b>	<b>1</b>
Energy Performance Certificates	<b>4</b> Postgraduate Bursaries	<b>4</b>	<b>1</b>
	<b>200</b> Public Officials trained in 6 core areas	<b>83</b>	<b>90</b>

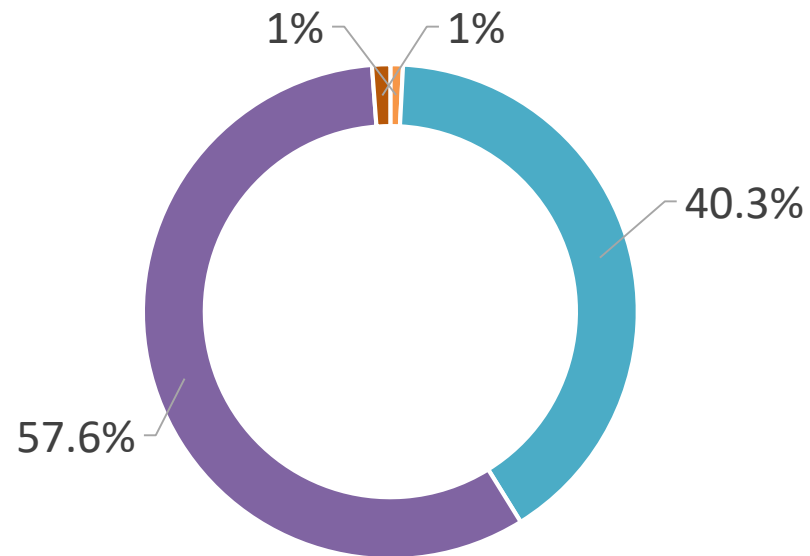


# Energy Efficiency : Section 12L Tax Incentives



The 12L tax incentive, according to the Income Tax Act, 1962 (Act No. 58 of 1962) provides an allowance for businesses to implement energy efficiency savings.

Energy Savings: Industry Classification



- Electricity, gas, steam
- Manufacturing
- Mining / quarrying
- Other

## Financial year March 2022:

- 39 applications processed
- 601 997 226 kWh energy Saved from thirty-nine (39) certified projects.
- 484 851 tonnes of CO2 in avoided GHG emissions
- R 571.89 million in tax incentives

## November 2013 to March 2022:

- 27.12 TWh energy impacts with an equivalent
- R 22.12 Billion in tax incentives
- 26.29 Mega tonnes of CO2 in avoided

# Energy Performance Certificates

## EPC Regulation


The Minister of Mineral Resources and Energy under section 19(1) (b) of the National Energy Act, promulgated the Regulation for the mandatory display and submission of Energy Performance Certificates in non-residential public buildings with a net floor area of **over 1,000m<sup>2</sup>** and private sector building with a net floor area of over **2,000m<sup>2</sup>** on 8 December 2020.

**SANEDI is mandated by the Regulation** to maintain a National Building Energy Performance Register (NBEPR), which must include the particulars of all buildings that fall within the regulated classification as well as relevant energy performance certificate data

***An EPC is valid for 5 years, it's a journey towards transforming old energy inefficient buildings into more sustainable efficient ones.***

Use QR Code to access the EPC Guideline





## Energy Performance Certificate for Buildings

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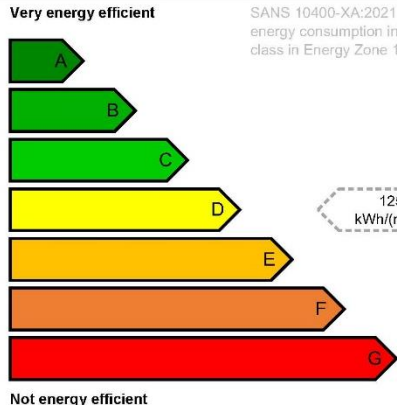
**X Building**  
101 Mqwa  
Johannesburg  
0129  
Gauteng

Certificate Number: EPC-SA 0000-2022

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This certificate is issued in terms of SANS 1544:2014, Energy performance certificates for buildings, and indicates how much energy is being used to operate this building. The energy performance of the building is based on measured energy performance and is compared to the maximum energy consumption provided for in SANS 10400 XA:2021.

Energy Performance Certificate



SANS 10400-XA:2021 maximum energy consumption in occupancy class in Energy Zone 1

125 kWh/(m<sup>2</sup>.a)

**Energy performance of your building**

21 kWh/(m<sup>2</sup>.a)

Energy excluded (outside net floor area) 0 kWh/(m<sup>2</sup>.a)

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**Building Information:**  
Owner: Sinovuyo  
Occupancy class(es): G1  
Number of floors: 3  
Net floor area: 2500  
Year of construction: N/A  
Building plan approval: N/A  
Occupancy certificate: N/A  
Year of last major renovation: 2008  
Energy zone: 1  
Cadastral information: Erf 0000-1234-000

**Administrative Information:**  
Accredited body: X Practitioners(Pty) Ltd  
Accreditation nr: EPC0000  
Assessor name: Asandile Manzi  
Date of issue: 2022-10-05  
Valid until: 2027-10-04  
Record nr: 01

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Carrier	Type	From (date)	To (date)	Energy [kWh]	Net Floor Area	Performance [kWh/m <sup>2</sup> ]	Exclusions Performance [kWh/m <sup>2</sup> ]
Electricity	Grid	2021-01-01	2021-12-31	30 000	2 500	12	0
Gas		2021-01-01	2021-12-31	7 000	2 500	3	0
Liquid Fuel	Diesel	2021-01-01	2021-12-31	15 000	2 500	6	0

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**LOGO**

Technical Signatory: Ryn X

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# Energy Performance Certificates



## Key EPC Facts

**8 Dec. 2020 to 7 Dec. 2022**

2-year period for Building Owners and Accounting Officers to comply with regulation

**5 Years**

Validity of Energy Performance certificates

**Building Size**

Public - Total net area of > 1000 m<sup>2</sup>

Private - Total net area of > 2000 m<sup>2</sup>

**Building Classifications**

A1 – Entertainment & public assembly

A2 – Theatrical & indoor sport

A3 – Places of instruction

G1 – Offices

**South African National Standards utilised for EPCs**

SANS 10400-XA:2021

SANS 1544:2014

**Failure to publicly display EPC**

A fine not exceeding five million rand;

Imprisonment for a period not exceeding five years ;  
or both such fine and such imprisonment



## SANEDI Programme

Awareness and Stakeholder Engagement for service industry and building owners/accounting officers

Hosting of the National Building Energy Performance Register (NBEPR)

Support the Department of Mineral Resource and Energy with compliance & monitoring

Continuous development of the Regulation and Standards with SABS and SANAS

EPC Guideline with all relevant information for broad array of stakeholder

*This is not an event or project, it is a journey ....*



## Impact

SANEDI SANAS EPC Accreditation and SMME Partnership (Panel for data collection)

Job Creation and Youth & Women Empowerment

Access to building energy performance dataset for research and policy development

EPC data collection and Certifications for Public Buildings (DMRE/Other Public Buildings)



# FINANCIAL INFORMATION MARCH 2020/21

# Statement of financial Position



	2022 R '000	2021 R '000
<b>Assets</b>		
<b>Non-Current Assets</b>		
Property, plant and equipment	6 116	6 764
<b>Current Assets</b>		
Receivables from exchange transactions	18 044	4 744
Cash and cash equivalents	303 784	260 613
	<b>321 828</b>	<b>265 357</b>
<b>Total Assets</b>	<b>327 944</b>	<b>272 121</b>
<b>Liabilities</b>		
<b>Current Liabilities</b>		
Payables from exchange transactions	6 366	7 227
Unspent conditional grants and receipts	145 631	103 411
Employee benefit provisions	4 492	5 593
	<b>156 489</b>	<b>116 231</b>
<b>Total Liabilities</b>	<b>156 489</b>	<b>116 231</b>
<b>Net Assets</b>	<b>171 455</b>	<b>155 890</b>
Accumulated surplus	171 455	155 890
<b>Total Net Assets</b>	<b>171 455</b>	<b>155 890</b>

- Cash and cash equivalents comprises mainly cash from ring fenced funds
- Surpluses funds approved by National treasury for projects in 2022

# Statement of financial Performance



	Notes	2022 R '000	2021 R '000
<b>Revenue</b>			
<b>Revenue from exchange transactions</b>			
Services Rendered: Sponsorship & Consultancy		6 794	631
Interest received		6 319	7 789
Other income		230	151
Gain on foreign exchange		61	-
<b>Total revenue from exchange transactions</b>		<b>13 404</b>	<b>8 571</b>
<b>Revenue from non-exchange transactions</b>			
<b>Transfer revenue</b>			
Government grants	12	87 573	80 471
<b>Total revenue</b>	10	<b>100 977</b>	<b>89 042</b>

**87% of  
income is  
from  
government  
grants**

# Statement of financial Performance

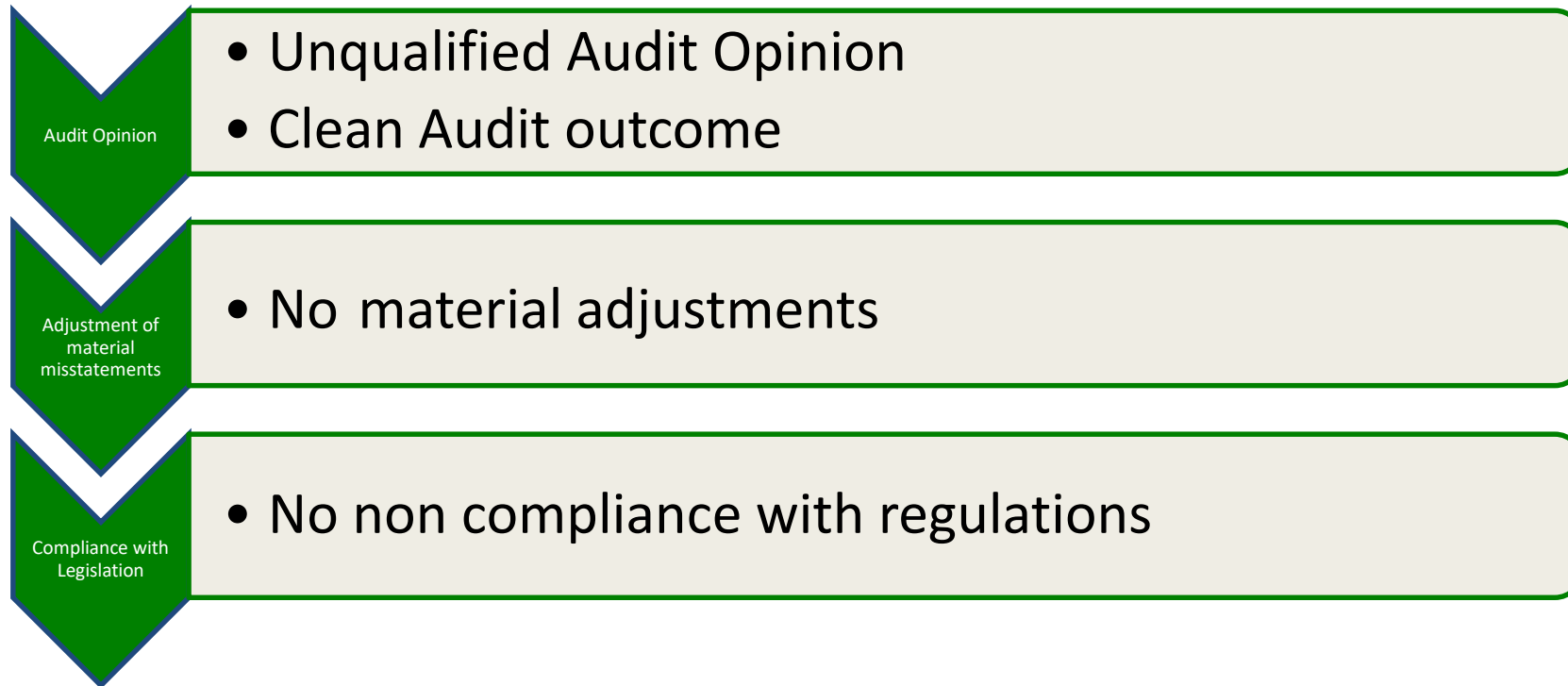


<b>Expenditure</b>			
Direct personnel costs	13	(32 962)	(36 792)
Director's remuneration	24	(259)	(269)
Restructuring		281	(281)
Depreciation and amortisation		(3 072)	(2 348)
Reversal of impairments	14	(16)	(77)
Provision for Doubtful Debt	15	11	-
Repairs and maintenance		(114)	(649)
Project development costs	17	(33 834)	(21 009)
Loss on foreign exchange		-	(19)
Operating expenses	16	(15 447)	(12 608)
<b>Total expenditure</b>		<b>(85 412)</b>	<b>(74 052)</b>
<b>Surplus for the year from continuing operations</b>		<b>15 565</b>	<b>14 990</b>
Discontinued operations	21	-	(90 974)
<b>Surplus (deficit) for the year</b>		<b>15 565</b>	<b>(75 984)</b>

**No Deficit, surplus is mainly from interest and other income generated.**

✓ **78% of expenses :**

- ✓ **Personnel costs**
- ✓ **Project development costs**







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**THANK  
YOU**