



# 2015

ANNUAL REPORT



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# ABOUT

THE POWER INSTITUTE FOR EAST AND SOUTHERN AFRICA (PIESA)



**The Power Institute for East and Southern Africa (PIESA) is a voluntary regional electricity industry association established in 1998 to facilitate and coordinate the sharing of information and technology in the specialised areas of:**

- Technology and engineering support;
- Applied research;
- Standardisation;
- Environmental management; and
- Technical development and training

PIESA aims to be the catalyst for sustainable regional technological cooperation in expanding the electricity distribution industry for regional growth and development by:

- Encouraging participation by all regional electricity distributors and supporting industries;
- Compiling, optimising and maintaining integrated information systems for technology related to the distribution of electricity including technical equipment specifications and codes of practice that are appropriate for the regional environment;
- Providing a mechanism for continuously capturing the experiences of members in order to improve efficiency;
- Encouraging the use of local resources and manufacture of equipment for use in the distribution industry;
- Promoting applied research in areas that are relevant to the effective performance of members;
- Fostering a culture of technology transfer and skills development among the members;

- Developing strategic alliances and partnerships with other related organisations involved in or with the electricity distribution industry.

In a nutshell, PIESA aims to improve electrification in East and Southern Africa through sharing information, research, technology, skills and experiences for the benefit of customers and suppliers in the electricity distribution industry. The main focus is on technical rationalisation to achieve economies of scale with local manufacturers in an effort to enhance electrification in the region.

Membership is open to electric power utilities in East and Southern Africa, manufacturers, suppliers of equipment, researchers, academic institutions, investors, financiers and other associations who wish to participate in PIESA's activities.

PIESA is governed by a Board of Directors with representatives from each participating utility. The prime responsibility of the Board is to determine the objectives and direction of PIESA.

PIESA's core activities are conducted through its four Board Advisory Committees:

- **Electrification**
- **Non-Technical Loss Reduction**
- **Environmental and Safety Management**
- **Standardisation**

Members currently include electricity distributors from the following countries: DR Congo, Kenya, Lesotho, Malawi, South Africa, Tanzania, Uganda, Zambia and Zimbabwe.

# MEMBERS

OF THE PIESA BOARD



**Peter Mtonda**

ESCOM  
Malawi



**Mshlomi Seithleko**

LEC  
Lesotho



**Sandile Maphumulo**

AMEU  
Southern Africa



**Bhukosi Siso**

ZESA  
Zimbabwe



**Zimbiso Chimbima**

UMEME  
Uganda



**Benson Muriithi**

KPLC  
Kenya

# MEMBERS

OF THE PIESa BOARD



**Besty Phiri**

Zambia  
ZESCO



**Mebolana Montala**

SNEL  
DR Congo



**Sophia Mgonja**

TanESCO  
Tanzania



**Rick St John**

Affiliates



# CHAIRMAN'S

REVIEW - MR PETER CHISUSE MTONDA



**Another year has gone and the challenges facing our region in the Power Distribution industry are still with us. The International Energy Agency estimates that 625 million people in Sub Saharan Africa have no access to electricity. This means that on average, only 20% of the African population has access to electrical power. This energy poverty is widely acknowledged as the biggest barrier to removing income poverty. The irony of it all is that Africa is well endowed with energy resources, but has not managed to convert these resources to electrical power. Some estimates say less than 10% of the hydro-potential on the continent has been exploited.**

The Continent is vast in its geographical extent, making it very challenging to put huge infrastructure to address the power deficit. Huge Generation plants and long Transmission lines are inevitable for sustainable development. However, the emergence of feasible renewable energy technology has challenged the traditional approach of erecting huge infrastructure, with a movement towards distributed generation, thus reducing the need for extensive transmission lines which are intrinsically costly and introduces inefficiencies, as technical losses are inevitable.

While PIESA is primarily concerned with electrical power distribution, because of the changing structure of the electrical power industry, it is inevitable that issues pertaining to renewable energy generation are pertinent as this essentially occurs in the distribution network. The consequence of this is that the traditional thinking and practice of extending the grid

to supply the rural areas needs to change. It should now be possible to access the rural areas faster by using renewable energies like solar, whose capital outlays are slowly coming down making the projects more and more feasible.

Other challenges facing the industry relate to policies regarding revenue protection in order to increase revenues and tariffs which are generally considered to be key in attracting investment in the power sector. Regarding tariffs, it is comforting to note that there is increasing awareness and discussions by many stakeholders about the need to review tariffs to be cost reflective to make it worthwhile for investors to participate in the industry.

Despite the numerous challenges, we continue to soldier on to achieve the goals of supplying power to our people, with the ultimate goal to achieve 100% electricity penetration, as is the case in developed countries.

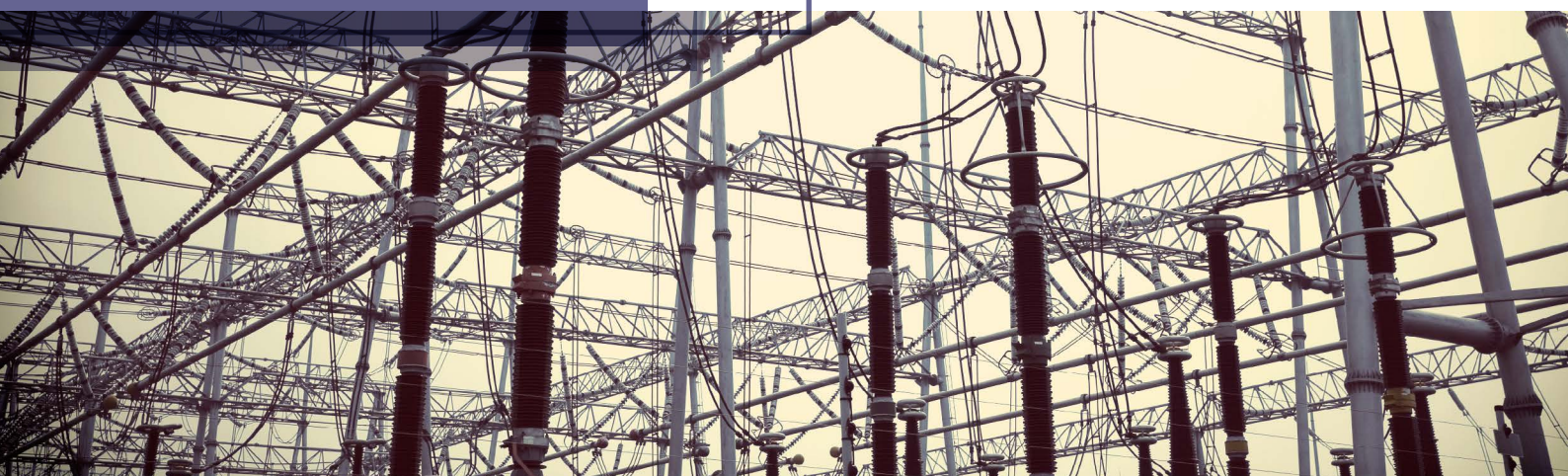
Sincerely

**Peter Chisuse Mtonda**

PIESA Board Chairman

# VISION

## AND OBJECTIVES



### Vision

PIESA's Vision is to be the catalyst for sustainable regional technological cooperation in expanding the Electricity Distribution Industry and stimulating the electrification for regional growth and development.

### Principal Objectives

To stimulate the electrification of the region by:

- Broadening Membership - Participation from all regional electricity distributors and supporting industries
- Maintaining a centralised integrated information system for technology related to the distribution of electricity
- Developing mechanisms for the continuous capture of experiences of members to improve efficiencies (feedback loop)
- Encouraging the use of local resources and the manufacture of equipment for use in the distribution industry
- Optimising and harmonising technical equipment specifications and codes of practice for the regional environment
- Promoting applied research in areas that are relevant for the effective performance of the members
- Developing a culture of technology transfer and skills development among members
- Developing strategic alliances and partnerships in research, industry and manufacture and other similar organisations
- Compilation of standards and guidelines with the objective of minimising the impact on the natural environment
- Being flexible to the needs of an evolving Electricity Distribution Industry
- Facilitating dialogue relating to the Electricity distribution Industry
- Promoting energy efficiency
- Operating, maintaining upgrading and refurbishment of assets cost effectively.
- Promoting occupational health and safety.

FROM THE  
**DESK**  
 OF THE EXECUTIVE DIRECTOR



“Most of these utilities attend conferences in South Africa relating to electrical power and it was decided that the ED capitalise on these opportunities.”

## THE POWER INSTITUTE FOR EAST AND SOUTHERN AFRICA (PIESA)

### ANNUAL GENERAL MEETING – SEPT 2015

#### EXECUTIVE DIRECTOR'S REPORT 2014/15

One of the major challenges faced by PIESA as a voluntary association is the retention of membership to keep it going. A concern was raised about some members not paying their membership fees. Another challenge is to get utilities in the region who are not yet members to join so that there can be critical mass going forward. To this end, the board mandated the Secretariat to engage the members by appropriate means to remind them of the obligation to pay membership fees and to approach non-members in the region.

Initially it was suggested that the chair and the Executive Director travel to the non-member utilities to campaign for membership. This exercise proved costly and an alternative approach was implemented. Most of these utilities attend conferences in South Africa relating to electrical power and it was decided that the ED capitalise on these opportunities. Botswana, Namibia, Mozambique and Angola were approached in this way and discussions are at different levels of progress.

A portfolio committee on Asset Management was formed as per the board resolution.

In line with the request from affiliate members, a mini-conference was held in Malawi in February, 2015. ESCOM did an excellent job and the conference was a resounding success, despite earlier threats of cancellation due to severe storms in Malawi which resulted in extensive damage to the road infrastructure.

PIESA is still working very hard at maintaining external stakeholder relationships, which include executive membership of IERE and affiliation to the African Electro-technical Standardization Commission (AFSEC), Electricity Suppliers Liaison Committee (ESLC) and SADCSTAN, especially for the Standardisation Secretariat Portfolio Committee. It is however imperative that members serve on these stakeholders as experts. There was a call from AFSEC for members to serve on Technical Committees and Working Groups. There was also a call from SADCSTAN for members to forward the standards they would like prioritised for harmonisation.

Affiliate members now have representation on the board of PIESA in the form of Rick St John from Lucy Electric.

The issue of the visibility of PIESA and its activities within the member utilities was discussed and members were urged to distribute reports and any information about PIESA activities in their organisations.

Preparations for the annual conference in September 2015 started in this Financial Year. The initial suggestion was to host it in Namibia and request Nampower to participate, though they are not members. This was futile and preparations to hold it at Kariba were initiated.

We look forward to a productive 2015/2016.

**Knox Msebenzi Pr. Eng.**

PIESA Executive Director



# COMMITTEES

## AND ADVISORY COMMITTEE

### ADVISORY COMMITTEES

PIESA advisory committees are to be established as forums where members and technology partners can meet and discuss pertinent issues and agree on regional strategies and actions.

Each advisory committee will have a Chairperson to act as the convener, and be responsible to call the meetings and set the agenda. A Deputy Chair is to provide continuity in the event of absence of the Chair from a meeting and a Secretary to provide an administration service for the advisory committee such as agenda and minutes of meetings.

Each committee will also have a 'sponsor member' who will have a particular interest in the terms of reference of the particular advisory committee. This 'Sponsor' shall be a member of the PIESA Board, and will be responsible to liaise between the Board and the committee and convey specific requests for agenda items from the board.

It is suggested that initially five advisory groups should be established in the following groupings

- Utility Management and Governance
- Electrification
- Revenue Protection (Non Technical loss reduction)
- Environmental and Safety management
- Localisation

The participants are delegated by the utilities and a chairman is appointed to each Advisory Committees by the board. The Advisory Committees delegate strategies and executable projects to any or all of the five services secretariats. Information flow and committee administration conducted by an operations manager situated in the general administration secretariat.

In particular, the requirements for the Advisory Committees would be to:

- Meet on a regular basis,
- Identify pertinent subjects,
- Debate and exchange information,
- Network with each other,
- Develop regional plans, strategies and initiatives,
- Share experiences and best practices,

Regularly report, with recommendations, to the board, the secretariat and to the members.

Act in the interest of electricity supply industries in the region.

These advisory groups will perform the following specific functions:

#### (i) Utility Management and Governance

It will discuss issues of common concern and in particular direct the relevant portfolio secretariat to arrange relevant events for drawing up of guidelines for the transfer of skills in this regard.

# COMMITTEES

## AND ADVISORY COMMITTEE CONTINUED



It could for example liaise with the Knowledge Sharing and Networking secretariat portfolio to coordinate with universities to determine the viability of a Post graduate management course (or Degree) in Utility management. Alternatively, it could liaise with universities or management consultants with respect to setting up guidelines for corporate governance in the utility environment.

### **(ii) Electrification**

It will discuss and raise issues of common concern, share experiences and refer projects to the portfolio secretariat .

Examples of Electrification 'projects' would be;

- setting up working relationships with GSEP regarding the SE4All project .
- getting involved with the design and specifications for low cost electrification projects .

### **(iii) Revenue Protection (Formerly - Non Technical loss reduction)**

This advisory group is required to meet and raise matters of common interest, and determine the members that will serve on the portfolio secretariat .

The objective of the Advisory Committee is to address common problems in revenue management and loss control in the region and to establish a set of practical recommendations for all PIESA utility management aiming at modern metering innovations and to reducing losses.

### **(1v) Environmental and Safety management**

The function of this Advisory Committee is to identify environmental issues of common interest to PIESA members and contribute to business efficiency and environmental performance by the development of programmes to facilitate policy development, training and skills development, research and communication.

### **(iv) Localisation**

This advisory group is required to meet on a regular basis and discuss issues regarding the local manufacture of materials and equipment required for Electrification projects to be manufactured to PIESA standards .

The standards will be adopted or adapted from existing standards by the portfolio secretariat to suit the specific objectives defined by the group.

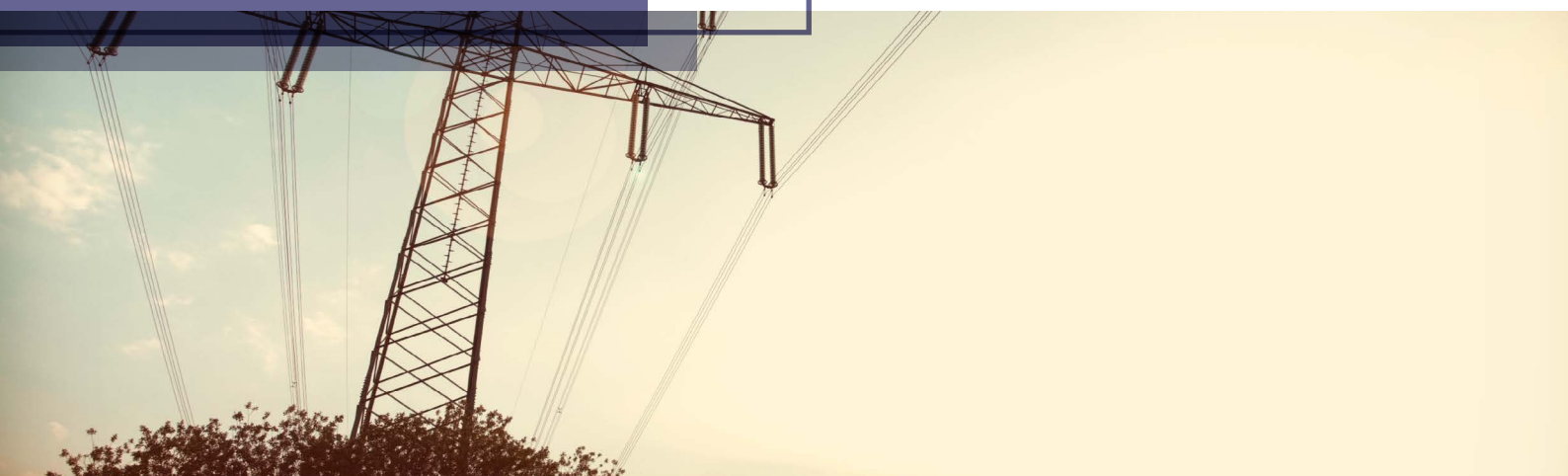
The role of the Localisation Advisory Committee will thus evolve to include the functions of the former standardisation working group.

Its prime function will be

- To review annually/as required the existing purchasing guide and make recommendations for review/updates
- To recommend to the PIESA secretariat those standards (local national standards or international standards that could be proposed as projects to SADCSTAN and /or AFSEC for harmonisation.
- Propose and prepare new PIESA purchasing guides for equipment /materials to support the standards recommended as in the point above.

# COMMITTEES

AND ADVISORY COMMITTEE CONTINUED



## SECRETARIAT PORTFOLIO COMMITTEES

The secretariat restructured the organisation in a way that allowed for clearly defined service delivery channels, with visible accountability and performance measurement processes in place.

Working groups have now become Advisory Committees, supported by five new services secretariats, each staffed with a manager and a mix of hired and seconded resources.

The aforementioned advisory groups as listed below:

- Administration
- Supply Chain management
- Standardisation
- Knowledge Sharing and Networking
- Stakeholder Relationships

The Portfolio Committees will perform the following specific functions

### (i) Administration and Finance

The primary role of this Secretariat is to coordinate activities of the Board, and the various Advisory Committees.

Provide a financial service including determination of subscriptions, billing and revenue collection and production of regular financial statements and an external audit at the end of each financial year.

Set up and maintain good communications between members by means of telecommunication, email and internet and follow up assigned tasks and activities performed by individual members.

The Secretariat is required to assist the Board, and the Advisory Committees with logistical and administrative support.

### (ii) Standardisation

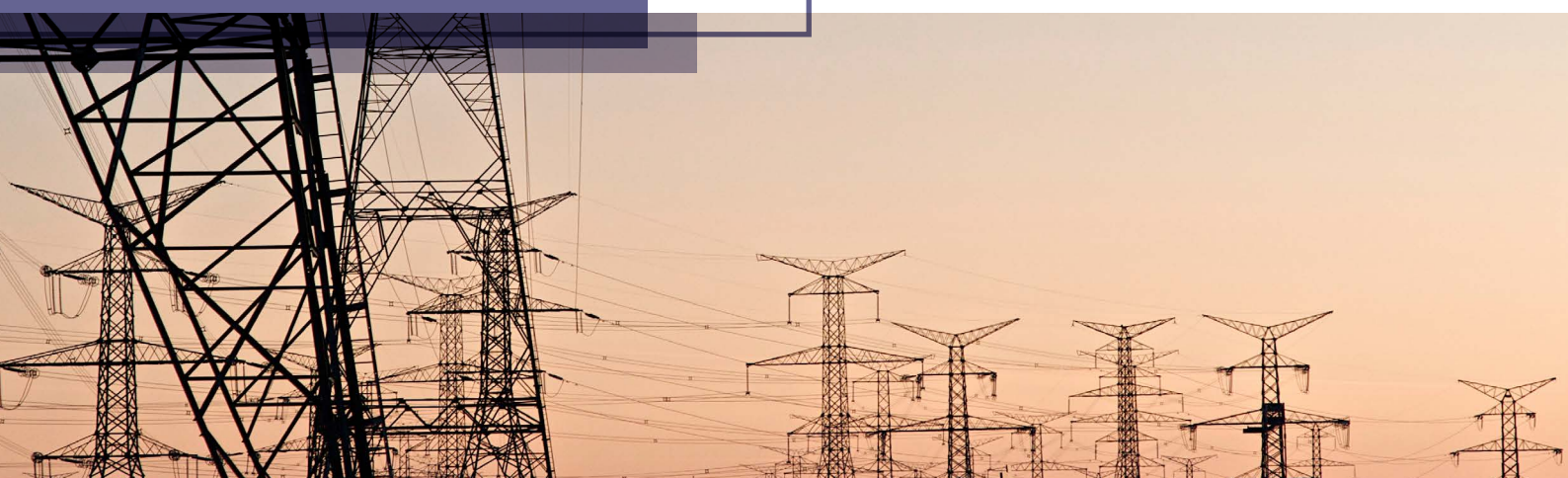
The Standardisation Portfolio Committee will provide a Standardisation service to all Advisory Committees. Each group will have a requirement to acquire the correct existing standard for a particular function.

Recognising that the higher level standards are generally broader and directly suitable as purchase specifications, PIESA can use the common knowledge /needs of its members to develop purchasing guides based on the higher level standards. Such guides should be typically 1-2 pages of text plus a purchasing schedule. The schedule should be in editable format, separate from the guide published in Pdf format.



# COMMITTEES

## AND ADVISORY COMMITTEE CONTINUED



This has the advantage of retaining the added value of the PIESA standards in a form that can more readily be kept up to date than a full technical specification.

Where the reference standard is an IEC document, it can be included in the IEC's allocation of free IEC standards to affiliate members, or in the case of an IEC member, sold in its IEC form or adopted as a national standard. The reference standard can be proposed to SADCSTAN as a harmonisation project.

NOTE: There will be issues of copyright to be agreed between SADCSTAN and IEC, but this is outside the scope of control or responsibility of PIESA.

Where the reference standard is a national standard from one of the SADC or East Africa countries, it can be proposed to SADCSTAN as a harmonisation project. PIESA should first consult with the relevant national standards body (NSB), as it might be preferable for the NSB as a member of SADCSTAN to make the proposal, with a motivation supported by PIESA.

Where the reference standard is an NRS specification, the PIESA members should have direct, controlled-access to the NRS specification by arrangement with Eskom/the Electricity Suppliers Liaison Committee (ESLC) in South Africa. PIESA is already an observer member of the ESLC, which is the committee that develops NRS specifications. By agreement, PIESA can be included in the NRS WGs and so give input when an NRS of interest to PIESA is under review, or a new NRS is being developed. The PIESA secretariat/representative on the ESLC should ensure the relevant steps are taken to have PIESA members included as observer members of the NRS WGs of

interest to PIESA and that they receive the draft documents. Suitable Arrangements for the draft NRS specifications to be reviewed by PIESA members need to be established by the PIESA secretariat in collaboration with the PIESA WGs/Advisory committees.

The role of the standards portfolio in the PIESA secretariat will be

- To liaise with and make recommendations to SADCSTAN (and if applicable, also AFSEC)
- Be custodian of the processes and procedures (outlined in the plan of action) and templates
- Flag reminders to the Localisation Advisory committee for outstanding actions.
- To represent/ensure representation of PIESA on the ESLC and ensure that PIESA members are nominated onto the relevant NRS WGs.
- Ensure timely input from PIESA to relevant draft NRS specifications
- Ensure PIESA members are kept informed of AFSEC standardisation activities and solicit for appropriate PIESA membership of AFSEC technical committees.

NOTE this is a mirror of how the IEC operates:

At head office, the technical officer from the PIESA secretariat will be the custodian of the processes and procedures

# COMMITTEES

AND ADVISORY COMMITTEE CONTINUED

## (iii) Knowledge Sharing and Networking

The PIESA Board and Advisory Committees will direct their requirements for skills development and training needs to this committee, who will then coordinate a Working Group staffed with the best available combination of volunteers or hired individuals or companies, who would be in a position to provide this form of skill development.

Depending on the level of sophistication of the project, the service secretariat will

- Project identification & facilitation
- E learning
- Pilot Project planning
- Academic Cooperation

## (iv) Stakeholder Relationships

This secretariat is intended to be a coordination body for linking with external stakeholders that can benefit the PIESA.

All Advisory Committees will refer their requirements for linking to external organisations to the secretariat

## (v) Supply Chain Management

The Supply Chain Management Portfolio Committee is to work closely with the Localisation Advisory Committee and on issues relating to procurement and localisation of the supply chain. Maintenance and general asset management issues will also be part of this portfolio. To the extent that standards affect localisation, this committee will work closely with the Standardisation Portfolio Committee and the Electrification Advisory Committee.

# FINANCIAL

## STATEMENTS



The association is predominantly funded from membership fees with the most dominant expenditure items being for the regional secretariat in Johannesburg, South Africa, travel expenditure and conference costs. The year ended February 2015 produced a deficit amounting to (R1 000). Excess funding amounting to R708 000 is held in interest bearing money market accounts and the interest is applied to the general funding of the organisation. An audit was conducted by the Johannesburg office of the international audit firm KPMG, which was unqualified.

The most pressing financial challenges for this period related to the non payment of membership fees by a number of country members, as well as finding ways to obtain more operational value from the available financial resources.





# FINANCIAL

## STATEMENTS CONTINUED

### ABRIDGED FINANCIAL RESULTS AND POSITION FOR THE YEAR ENDED FEBRUARY 2015

Income	2013	2014	2015
Membership fees	1 355 000	1 481 000	1 336 000
Events and Education	76 000	451 000	158 000
Interest	9 000	9 000	35 000
<b>Total income</b>	<b>1 440 000</b>	<b>1 941 000</b>	<b>1 529 000</b>

Expenditure			
Regional Secretariat	1 046 000	1 120 000	1 210 000
Travel and venue costs	208 000	456 000	228 000
Audit fees	23 000	16 000	27 500
IERE affiliation fees	46 000	55 000	65 000
Taxation	13 000	0	0
<b>Total Expenditure</b>	<b>1336 000</b>	<b>1 647 000</b>	<b>1 530 000</b>

Surplus for the year	104 000	294 000	(1 000)
Retained surplus brought forward	660 000	764 000	1 058 000
<b>Retained surplus at end of year</b>	<b>764 000</b>	<b>1 058 000</b>	<b>1 057 000</b>

Assets and liabilities			
Cash and cash equivalents	556 000	942 000	708 000
Receivables	274 000	181 000	457 000
Education fund	(33 000)	(33 000)	(33 000)
Payables and prepaid revenue	(33 000)	(32 000)	(75 000)
<b>Net assets held</b>	<b>764 000</b>	<b>1 058 000</b>	<b>1 057 000</b>

# MEMBERSHIP

## CATEGORIES AND ELIGIBILITY



**Membership of PIESA is open to the electricity industry. The number of members from time to time shall not be limited, but shall at no time be less than five (5). Membership may not be assigned or transferred to any other person, company or concern.**

Membership is obtained by paying the prescribed contributions as stipulated in Article 14.2 following the acceptance by the PIESA Board of the application for membership.

PIESA has the following categories of membership:

Full Members are organisations that:

- (a) Generate, transmit, distribute or buy and sell electricity; or
- (b) Represent an organisation contemplated in (a).

Affiliate Members are organisations or individuals with an allied interest to PIESA, and would include, inter alia, manufacturers and suppliers of services or equipment to the electricity distribution industry, researchers, consultants and financiers.

### Members

- AMEU
- ESCOM
- Eskom
- KPLC
- LEC
- SNEL
- TANESCO
- UMEME
- ZESA
- ZESCO

### Affiliate Members

- Aberdare Cables
- Circuit Breaker Industries
- Hi-Tech Transformers Maintenance
- Linegear
- Landis + Gyr (Pty) Ltd
- Lucy Electric South Africa
- Metal Fabricators - Zambia PLC
- Powertech Transformers
- Reinhausen South Africa
- Schneider Electric
- Siemens Southern Africa
- TE Connectivity
- ZEST WEG Group

### Benefits to members include:

- Access to and participation in the development of standards for the electricity distribution sector;
- Sharing of information, technology and skills and, in particular, experiences gained from pilot projects and implementation of new technologies, and local solutions to recurrent problems experienced in the region;
- Network with like-minded organisations, joint research activities and access to information from international research organisations e.g. IERE, EPRI, SAPURAB;
- Influence the development of standard specifications appropriate for the region through active involvement in the Advisory Committee;
- Coordinate with like-minded organisations e.g. SADCSTAN, UPDEA towards the common goal of harmonised standards;
- Participate in training activities, exchange programmes and development projects;
- Participate in regional workshops and conferences, and network with strategic decision-makers in the electricity industry;
- Provide opportunities for market growth and economies of scale for regional manufacturers and suppliers of equipment and services.

# MEMBERSHIP

COVERAGE



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