



ANNUAL REPORT 2016





Contents

•	03	About the Power Institute for East & Southern Africa
•	04	Members of the Board
•	05	Chairman's review
•	07	Vision & Objectives
•	08	From the desk of the Executive Director
•	09	Advisory Committees
•	11	Environmental & Safety Advisory Committee
•	12	Financial statements
•	15	Membership

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



Eng. B. Siso
PIESA board chairman



Peter Mtonga
ESCOM – Malawi



Mohlomi Seithleko
LEC – Lesotho



Sandile Maphumulo
AMEU – Southern Africa



Simbiso Chimbima
UMEME – Uganda



Benson Muriithi
KPLC – Kenya



Bestty Phiri
Zambia – ZESCO



Mobolama Montala
SNEL – DR Congo



Sophia Mgonja
Tanesco – Tanzania



Rick St John
Affiliates



Greg Tosen
Eskom – South Africa

CHAIRMAN'S

REVIEW - Eng. B. Siso



2016 Annual report of
PIESA Chairman – Eng.
B. Siso

It is my pleasure to write my inaugural report as Chairman of PIESA since I assumed this role in September 2015 at the historic Victoria Falls Annual General Meeting. Let me express my appreciation for the honour to serve this institute for the next two years.

Our region faces a number of challenges and our role is to direct our energies to tackle them as a regional collective body and indeed as individual members of PIESA. In addition to our infrastructural deficits, our region as a whole was affected by the drought brought about by the El Nino phenomenon. A number of our members rely very heavily on hydro power, therefore, needless to say, this past year has been particularly challenging. This has no doubt sharpened the need for us to embark on efforts to diversify our generation sources. The options for generation sources are further constrained by a need for environmental considerations. The focus, therefore, has been on renewable sources. While our association is focused on power distribution, renewable sources find themselves falling in the category of distributed generation, therefore they reside in our distribution infrastructure. This means all the challenges relating to grid connections are in our distribution networks.

Distributed generation has challenged the conventional business model of well-defined boundaries between the conventional generation, transmission and distribution. Furthermore, the conventional one-way flow of power from the utility to the consumer has been disrupted because of the emergence of independent power producers who are also consumers but have the flexibility to supply into the grid. The implications of this has been a complete re-think of metering technology. These challenges are often lumped in modern acronyms such as smart grids and smart metering.

There is a general realisation and acceptance by many influential opinion leaders that for our region to develop, a massive amount of power related infrastructure needs to be constructed. This is what will facilitate industrialisation resulting in economic development. It is for this reason that a number of countries in our region have started to consider nuclear as a source of energy for generating electric power. It is also important to note that as a continent, a certain amount of fossil fuel generation is inevitable, despite the calls for limiting carbon emissions in order to mitigate climate change.

“As I assume the chairmanship of this association, I would like to share my vision of PIESA, which I can summarise as ‘Let us walk the talk’.”

Other challenges facing the industry relate to policies on tariffs. It has been said that Africa does not have a problem in investment in the power sector, but has a problem with tariffs. It is comforting to note that there is increasing awareness and discussions by many stakeholders, including the regional energy ministers, about the need to review tariffs to be cost reflective to make it worthwhile for investors to participate in the industry. Many of our members face huge challenges with their energy regulators when they apply for tariff adjustments.

As I assume the chairmanship of this association, I would like to share my vision of PIESA, which I can summarise as ‘Let us walk the talk’. I would like to see us implementing many initiatives instead of just talking. As an example, I am glad to announce that IERE has kindly agreed to fund us to the tune of US\$10,000 to do the project management of a PV project in the Gulu district in Uganda, with our fellow member Umeme and the Rural Electrification Agency in Uganda.

We have embarked on similar projects in the past like the Single Wire Earth Return (SWER) Project in Zimbabwe which was initiated and assisted by PIESA. To date Zimbabwe has rolled out this technology to all its eight provinces. It is very popular with the remote rural communities who hitherto had not dreamt of ever accessing clean energy in the form of grid electricity. ZESA is ready and willing to assist fellow members who want to implement SWER in their respective areas of supply.

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,

Engineer Bukhosi Siso Bsc

(Elec.Eng), MSc, MBA, C. Eng, MIET, FzweIE, MInstLM

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



Knox Msebenzi Pr. Eng.
PIESA Executive Director

THE POWER INSTITUTE FOR EAST AND SOUTHERN AFRICA (PIESA)
EXECUTIVE DIRECTOR'S REPORT 2015/16

A highlight of the 2015/2016 year was the very successful Victoria Falls conference where our Board and Annual General Meetings were held. A new chairman, Engineer Bukhosi Siso from ZESA, was elected by the board and endorsed at the AGM. The Secretariat initiated to have a mini conference similar to the one held in 2015 in February in Malawi. However, members felt this was not necessary and the next event was the board meeting at the Africa Utilities Week in Cape Town in May 2016.

A major initiative by the board is the launch of a PIESA magazine. A launch edition was presented to the board members at the Africa Utility Week. The issue about the number of publications to be circulated to members and the associated costs needs to be resolved. The funding model essentially cover the fixed costs of marketing and editing, but does not include the variable costs of printing many copies. A challenging issue is the work done by the Advisory Committees between the meetings alongside the board meetings. Only the Electrification AC was able to meet in Malawi. The Environment and Safety Advisory Committee has proposed to meet and hopefully this time it will succeed.

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. The Secretariat urges members to serve on these stakeholder committees as experts. There was a call from AFSEC for members to serve on Technical Committees and Working Groups. We are happy to report that this call was headed by two members who joined the Solar PV and rural electrification standards and the Systems Aspect of Electrical Supply. There was also a further call from SADCSTAN for members to forward the standards they would like prioritised for harmonisation

The ED delivered a paper at the AMEU entitled Nuclear Power Generation - A Necessary Option for Africa.

We are happy to report that IERE has agreed to fund PIESA to do the project management of the PV installation by an NGO "Light-the-World" in Northern Uganda. The power will serve a refugee community in Gulu District. The idea is for PIESA to work hand in hand with the NGO and the appropriate local utility (Umembe and the Rural Electrification Agency) to document the project planning and execution for the benefit of members of PIESA.

The board mandated the Secretariat to prepare for board and annual general meetings in Uganda for October 2016.

We look forward to a productive 2016/2017.

Knox Msebenzi Pr. Eng.
PIESA Executive Director

ADVISORY

COMMITTEES

To promote and achieve increased levels of access to electricity on our continent by sharing best practices and experiences between members on optimal network designs, tamper proofing, capital contributions, new and alternative distribution innovations.

ADVISORY COMMITTEES

PIESA Advisory Committees are to function 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 PIEASA 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,



To promote a reduction in distribution losses in all member utilities by arranging regular webinars where members can share best practices and experiences



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.

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 lowcost 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 thatcould be proposed as projects to SADCSTAN and /or AFSECfor harmonisation.
- Propose and prepare new PIESA purchasing guidesfor equipment /materials to support the standardsrecommended as in the point above.

ENVIRONMENTAL

& SAFETY ADVISORY COMMITTEE

Some of the significant environmental aspects for electricity distribution include:

- Tree cutting or disturbance of plants: for constructing new powerlines, or maintaining existing servitudes and wayleaves;
- Construction across or near wetlands and rivers;
- Working in close proximity to heritage sites such as graves, monuments, fossils;
- Vulture, cranes and eagle electrocutions/collisions;
- Waste disposal and hazardous substance (oil) spillages;
- Contractor non-conformance: potential legal contravention and reputational risks.

The safety concerns are the increasing number of employee and public injuries and fatalities in the electricity distribution industry. The nature of some of these incidents are:

- Contact incidents
- Fall from heights
- Motor vehicle accidents
- Animal related such as bees, wasps, dogs
- Public injuries or fatalities, including from increasing theft and vandalism

The PIESA Environmental and Safety Working Group (E&SWG) was established in the early 90s to provide guidance to all member utilities to manage these environmental and safety risks. Since its establishment, the E&SWG has finalised the following documents:

- Environmental and Safety Policy
- EIA Guideline
- EMP Guideline
- Environmental & Safety Advisory Committee Terms of Reference
- EWT/SAPP Wildlife Interaction
- PCB Guideline

The E&SWG is currently made of the following members: Eskom, Convenor (Troy Govender), Deputy Convenor, KPLC (Irene Maina), Secretary, ZESA (Thandiwe Sithole) and members are AMEU (Jayshree Pershad), ZESCO (Robam Musonda), ESCOM (Vera Mede), LEC (Tabai Motuba), TANESCO (John Lazimah), REA (Josslyn Mutua and Peninah Karomo), and Umeme (Beatrice Nambi)

Two meetings were held during the past twelve months:

15 September 2015, Victoria Falls, Zimbabwe which five members attended;

15-16 May 2016, Cape Town, South Africa, where four members attended.

The tasks and outcomes of the E&SWG in the past year have included the:

- Review and updating of the 3 Year Work Plan (2016-2018)
- Finalisation of the PCB inventory template, Environmental and Safety KPIs
- Collation of the Environmental and Safety Statistics for PIESA utilities for the past year.

For the near future, the E&SWG has proposed the following:

- 3 day Environmental Engineering to be hosted by ZESCO, and trainer provided by Eskom;
- 3 day Safety Management Training. A host utility is still to be determined, while ZESA will provide the trainer.

The E&SWG looks forward to working closer with utilities members to fulfil its mandate more effectively and efficiently.

Troy Govender Pr. Sci. Nat./C.P.R.P.

Eskom (Distribution)

Convenor

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 2016 produced a surplus amounting to (R46 000). Excess funding amounting to R265 568 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.

“The year ended February 2016 produced a surplus amounting to (R46 000). Excess funding amounting to R265 568 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.”

FINANCIAL

STATEMENTS CONTINUED

Statement of Financial Position

Statement of Financial Position at 29 February 2016

	2016 R	2015 R
Assets		
Current assets		
Trade and other receivables	913 724	456 570
Cash and cash equivalents	265 568	708 317
Total assets	1 179 292	1 164 887
Reserves and liabilities		
Reserves		
Accumulated funds	1 102 984	1 056 721
Current liabilities	76 308	108 156
Trade and other payables	43 504	75 352
Education fund	32 804	32 804
Total accumulated surplus and liabilities	1 179 292	1 164 887

Statement of Comprehensive Income

for the year ended 29 February 2016

	2016 R	2015 R
Revenue		
Membership fees	1 175 574	1 335 810
Interest received	38 088	34 606
Conference fees and sponsorships	615 276	158 155
Education programme	5 651	885
Total Income	1 834 589	1 529 456
Expenses	1 788 326	1 530 178
Annual report	11 422	10 658
Audit fee	27 500	27 500
Bad debts provision	50 000	0
Bank charges	8 582	7 888
Conference and working group expenses	278 589	153 586
Marketing	22 000	0
Printing and stationery	5 176	5 763
Secretariat fees	1 163 000	1 163 000
Secretarial Services	4 500	0
Subscription fees -IERE	70 474	65 119
Travel - international	50 726	28 740
Travel - localXQ	15 269	11 491
Website and communication costs	11 638	22 342
Venue costs	69 450	34 091
Net surplus before tax	46 263	(722)
Taxation		
Net surplus for the year	46 263	(722)
Retained income at the beginning of the year	1 056 721	1 057 443
Retained income at the end of the year	1 102 984	1 056 721



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.

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.

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

MEMBERSHIP COVERAGE



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