

# ANNUAL REPORT 2021



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# About the Power Institute for East and Southern Africa

**“The Power Institute for East and Southern Africa (PIESA) is a voluntary regional power utility association established on 28 February 1998.**

**Our aim is 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 focus is on technical rationalisation to achieve economies of scale with local manufacturers within the region.**

**PIESA’s Vision is to be the catalyst for sustainable regional technological cooperation in expanding the Electricity Distribution Industry and stimulating electrification for regional growth and development by:**

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



# Members of the PIESA Board



**Mr Mohlomi Seitlheko**  
Lesotho Electricity Corporation  
Chairman



**Mr Patrick Mwila**  
ZESCO  
Director



**Mr Simbiso Chimbima**  
UMEME LTD  
Director



**Jayshree Pershad**  
AMEU  
Director



**Ms Sophia Mgonja**  
Tanzania Electric Supply Company Limited  
Director



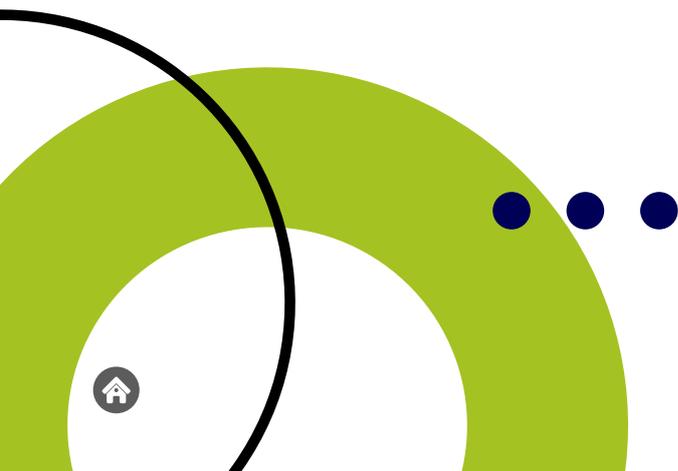
**Mr Harold Hayes**  
Landis+Gyr (Pty) Ltd  
Director



**Ms Sumaya Nassiep**  
Eskom Holdings  
SOC Ltd, Director



**Mr Vally Padayachee**  
PIESA  
Executive Officer





# Chairman's Review

**Mr Mohlomi Seitlheko, BSc (Elect), MBA,  
Chairperson of The PIESEA Board**

## **This is my second Chairman's Report as Chairman of PIESEA. It has been a very eventful year for PIESEA.**

The Covid pandemic which has devastated all walks of life around the globe, since early 2020, is still with us. We are currently moving into the so-called 4th wave. During this period, most of us have lost either family and/or friends due to Covid. In this respect, I extend our sincere condolences and deepest sympathies, especially to the family of retired PIESEA Board Chairman, Eng. Bukhosi Siso, who passed on due to Covid related conditions during the year. It's common knowledge that Eng Siso provided effective leadership and made an enormous contribution to PIESEA's growth and development during his long term on the PIESEA Board. I was really privileged to have been part of the Board he led and to now follow in his footsteps as the PIESEA Board Chair person.

PIESA continues to experience extremely challenging COVID 19 conditions since early 2020. The subsequent period is marked by muted economic growth due to regional total lock-down, as countries try to manage and curb the spread of the virus. PIESEA utilities were no exception, as the electricity industry slowed down and many planned projects were halted due to the lock-down in different regional countries. Electrification was suspended in many countries, as funding was diverted to finance emergency budgets to fight this pandemic. Increasing pressure on financially stressed consumers and high levels of unemployment due to job losses continue to prevail in the region. COVID forced utilities and industries to devise new ways of doing business and PIESEA also had to adapt. As international and regional travel between countries was restricted or prohibited, PIESEA continued with virtual meetings and virtual training sessions to continue generating value for its members.

In an endeavour to increase our value add to members, PIESEA will continue to host relevant webinars. Amongst these, a successful virtual webinar series on Utility Management was held early this year. Details are available in the Virtual Programme. 2021 also saw the completion of some pilot projects supported by PIESEA through PIESEA's strategic partners, such as Landis & Gyr.

A new PIESEA advisory group, on Asset Management, was established to give focus to infrastructure asset management in the various PIESEA membership countries.

I would like to give a special thanks to IERE for their continued support to PIESEA activities and financing of the PIESEA training and development initiatives. The annual budget support that IERE provides to PIESEA is fully appreciated and I look forward to more corporation between the two organisations in future.

**I also want to take this opportunity of thanking the PIESEA Secretariat for their continued support over the years.**

*Mr Mohlomi Seitlheko*

# From the desk of the Executive Officer

Vally Padayachee, CD(SA); MBA; MSc (Eng)  
PIESA Executive Officer



**I write my report in the midst of one of the deadliest pandemics to confront the whole world i.e., the COVID-19 pandemic. According to the World Health Organisation (WHO) globally, as of 24 November 2021, there have been 258,164,425 confirmed cases of COVID-19, including 5,166,192 deaths, reported to WHO. As of 24 November 2021, a total of 7,702,859,718 vaccine doses have been administered.**

We've all lost friends and family due to the Covid pandemic. In this regard I want to extend our sincere condolences and deepest sympathies to the family of retired PIESEA Board Chairman, Eng Bukhosi Siso who passed on due Covid related conditions during the year.

According to the WHO reporting till October 2021 just five African countries, less than 10% of Africa's 54 nations, are projected to hit the year-end target of fully vaccinating 40% of their people, unless efforts to accelerate the pace take off. This comes as the region grapples to meet rising demand for essential vaccination commodities, such as syringes. Three African countries, Seychelles, Mauritius and Morocco, have already met the goal that was set in May by the World Health Assembly, the world's highest health policy-setting body.

At the current pace only two more countries, Tunisia and Cabo Verde, will also hit the target. In addition, WHO states limited access to crucial commodities such as syringes may slow the rollout of COVID-19 vaccines in Africa. UNICEF has reported an imminent shortfall of up to 2.2 billion auto-disable syringes for COVID-19 vaccination and routine immunization in 2022. Already some African countries, such as Kenya, Rwanda and South Africa, have experienced delays in receiving syringes. Only 27% of health workers in Africa have been fully vaccinated against COVID-19, leaving the bulk of the workforce on the frontlines against the pandemic unprotected, a preliminary analysis by World Health Organization (WHO) shows. Analysis of data reported from 25 countries finds that since March 2021, 1.3 million health workers were fully vaccinated, with just six countries reaching more than 90%, while nine countries have fully vaccinated less than 40%. In sharp contrast, a recent WHO global study of 22 mostly high-income countries reported that above 80% of their health and care workers are fully vaccinated.

The review period has been one of numerous challenges that continues to impact on power sector, already disrupted by the pandemic.

We believe that economic activity will increase as the impact of the pandemic subsides and mobility improves. This should increase commercial and industrial demand for power or electricity, which will bring relief to many of the problems faced during the crisis.

Over the past few months, lockdown measures have significantly reduced electricity demand in the commercial and industrial sectors.

Like many other organisations and countries globally, which were impacted by the Covid pandemic, the activities of PIEASA were not spared. All PIEASA in-person meetings were cancelled and were replaced by virtual meetings. As PIEASA we also focused on hosting webinars as a value add to our members. In this respect PIEASA hosted an excellent series of virtual sessions, on Utility Management in early 2021.

PIESA is still working very hard at maintaining external stakeholder relationships, which include executive membership of IERE and affiliate membership.

The electricity utility sector, though still severely impacted by the pandemic, will also be impacted by the fourth industrial revolution and probably by the fifth industrial revolution. This will further compel PIEASA member countries to rethink their business models to remain viable.

PIESA will continue to focus on further electrification which will still be a priority; PIEASA will also endeavour to assist member countries in addressing challenges associated with increasing technical and non-technical losses; increasing ingress of renewables, especially distributed energy, in the energy mix, as well as theft and vandalism.

A future energy system based primarily on RE will be better for people and the planet. A Just Energy Transition (JET) aims to make the process of shifting to a better energy system as fair and 'just' as possible. PIEASA will also pay careful attention to, and support, initiatives in promoting a JET in PIEASA member countries.

We continue to be grateful to IERE for continuing to provide PIEASA with much needed funding for key projects and initiatives.

PIESA will continue to focus on sharing case studies, knowledge and information amongst its members. To explore and investigate ways of introducing eLearning in respect of training, development and mentoring, of technical and engineering professionals as well as other resources at its member utilities.

Standardisation also continues to be a key focus for PIEASA, especially from a perspective of improving service delivery and fast-tracking electrification rollout.

PIESA has been, and will focus on growing its membership base, especially the affiliates' membership.

I also want to take this opportunity of thanking the members of the Board of Directors for their continued leadership and support of PIEASA, the PIEASA Secretariat and all the other members of PIEASA, especially those that assisted in keeping the PIEASA ship afloat during the ensuing period of the devastating COVID-19 pandemic.

**In conclusion I want to also take this opportunity of wishing all PIEASA members everything of the best for 2022. Given that the impact of the Covid pandemic is still around, the PIEASA family must stay safe, stay serene and stay secure – continue to wear masks, social distance, stay indoors if you can and sanitise regularly.**

*Vally Padayachee*

# Advisory Group Reviews

**PIESA Advisory Groups function as forums where PIEASA members, technology partners and affiliates meet and discuss pertinent issues and agree on regional strategies and actions. Each Advisory Group has the following structure:**

- A Chairperson to act as the convener and be responsible, in conjunction with the PIEASA Secretariat, to call the meetings and set the agenda
- A Deputy Chair, who provides continuity in the event of absence of the Chair from a meeting
- A Secretary to provide an administration service for the Advisory Group such as agenda and minutes of meetings.

Each Advisory Group 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 Advisory Group and convey specific requests for agenda items from the board.

**The following five advisory groups have been established:**

1. Standardisation
2. Electrification
3. Revenue Protection (Non-technical loss reduction)
4. Environmental and Safety management
5. Infrastructure Asset Management

The participants are mandated by their corresponding utilities and a chairman is appointed to each Advisory Committee by the PIEASA Board. The Advisory Committees delegate strategies and executable projects to any or all the four services secretariats. Information flow and committee administration is conducted by an operations manager situated in the general administration secretariat.

**In particular, terms of reference for the Advisory Committees would be to:**

1. Meet on a regular basis,
2. Identify pertinent subjects,
3. Debate and exchange information,
4. Network with each other,
5. Develop regional plans, strategies and initiatives,
6. Share experiences and best practices,

This year, like last year, the work of the various Advisory Groups has continued to be severely hampered by the impact of the COVID-19 pandemic. Many organisations and countries globally were severely impacted and the activities of PIEASA was also not spared. All PIEASA in-person meetings were cancelled and were replaced by virtual meetings. The Advisory Groups were unable to meet in-person. All such meetings were held virtually but on a shortened time.

The following reflects some of the some of the key strategies and/or focus areas for each of the said Advisory Groups during the ensuing financial year:

### 1. Electrification Advisory Group

The Electrification Advisory Group will continue with following initiatives.

- a. To share the strategies of other advisory or working groups on the document portal
- b. To survey members on their electrification %, based on the Board's acceptance of the revised access to electrical energy definition
- c. To explore ways and means to assist member countries to roll out electrification infrastructure much quicker
- d. To assist member countries to raise much needed funding to roll out electrification infrastructure
- e. To explore alternative business models given that the current model of selling electrical energy (kWh) is proving to be no longer viable for most member utilities
- f. To investigate the further incorporation of cost-effective renewable energy technologies in the energy mix
- g. Formalising an electrification partnership with POWER AFRICA
- h. To investigate and rollout smart technologies, smart grids, etc with a view to improving service delivery
- i. Significant attention is being paid to training, development, and mentoring initiatives especially with respect to the upskilling of personnel especially technical, engineering and leadership personnel

### 2. The Environmental and Safety Management Advisory Group

- a. There was a need to raise the profile of environmental and safety in the various utilities
- b. The Advisory Group resolved that to improve the safety and environment culture in utilities, it is also important to briefly discuss important and relevant safety and environmental issues that would benefit the attendees
- c. A wayleave guideline has been prepared and circulated to members
- d. The aspect of encroachments was still a cause for concern and requires further investigation to provide relief
- e. With respect to Practical Environmental & Social Impact Assessment (ESIA)

Eskom will arrange ESIA presentation and site visit.

- f. The Advisory Group suggested that each utility should submit a PCB inventory and provided a template to be used which was circulated to all members. The PCB template was workshopped and forwarded to all to populate

**“Many organisations and countries globally were severely impacted and the activities of PIEASA was also not spared.”**



### 3. The Revenue Protection Advisory Group

- a. Formalise a partnership between ESCOM, ZESCO and Landis+Gyr for implementation of MD metering pilot project. LEC have already put a plan into action and purchase order provided, equipment delivered and planning implementation. PIEASA members to sell these pilots within their own utilities
- b. Implementation of smart residential pilot projects for LEC and ESCOM. LEC have already put a plan into action and purchase order provided, equipment delivered and planning implementation. ESCOM will follow completion of LEC
- c. Sensitization of utilities on Rogue metering challenge to put mitigation plans in place and link up with other entities investigation this issue
- d. PIEASA Secretariat to organise a webinar for all members on TID rollover and sharing of information thereafter

### 4. The Standardisation Advisory Group

- a. Harmonization with standards that exist
- b. Recommendations of PIEASA to be integrated in practices of the utilities
- c. Spread lessons learned throughout members
- d. Integrate with & provide input on work of other standards bodies in Africa

- e. PIEASA as a source of reference on standards specifically in the award of tenders in the region
- f. Facilitate cross border trade
- g. Working with the regulator in implementing standards
- h. Centralize place to access information seamlessly
- i. Communication of standards to all member countries on a regular basis
- j. Communication means, to be defined
- k. Follow and report back on what is happening in the member utilities
- l. Identification on new standardization needs

### 5. Infrastructure Asset Management Advisory Group

This was a newly established advisory group that was set up during the course of this year. This advisory group will focus on all matters related to utility physical or infrastructure asset management utilising latest norms, standards and international best practices, etc.

The rationale is that if the infrastructure assets are not managed well and in “good shape” the utilities may not be able to deliver the much needed electricity and provide an effective and efficient service delivery to all its end use customers”

# 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 two categories of membership:**

**Full Members are organisations which:**

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

**Affiliate Members are organisations or individuals with an allied interest to PIESA, and would include:**

- manufacturers and suppliers of services or equipment to the electricity distribution industry,
- researchers,
- consultants
- financiers.

## **BENEFITS TO MEMBERS INCLUDE:**

Access to and participation in the development of standards for the electricity distribution sector

Sharing of information, technology, skills and, in particular, experiences gained from pilot projects and implementation of new technologies, 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, SAPURA

Influence the development of standard Specifications appropriate for the region through active involvement in the Advisory Committee

**UTILITY MEMBERS 2021**

- AMEU – Association of Municipal Electricity Utilities of Southern Africa
- EDM – Electricidade de Mocambique, E.P.
- ESCOM LTD - Electricity Supply Commission of Malawi
- ESKOM Holdings SOC Ltd – South African electricity supply company
- KPLC – Kenya Power and Lighting Company
- LEC – Lesotho Electricity Corporation
- SNEL - Société Nationale d'Électricité
- TANESCO – Tanzania Electric Supply Authority
- UMEME LTD – Umeme Company Limited
- ZESA – Zimbabwe Electricity Supply Authority
- ZESCO – Zambia Electricity Supply Corporation Limited

**AFFILIATE MEMBERS 2021**

- Circuit Breaker Industries
- Landis + Gyr (Pty) Ltd
- Lucy Electric South Africa
- Schneider Electric

# Financial Statements

## The Power Institute for East and Southern Africa (Association not for gain)

### STATEMENT OF FINANCIAL POSITION AS AT 28 FEBRUARY 2021

	Notes	2021 R	2020 R
<b>ASSETS</b>			
<b>Current assets</b>			
Trade and other receivables	2	348 183	455 039
Cash and cash equivalents	3	866 353	340 136
<b>TOTAL ASSETS</b>		<b>1 214 536</b>	<b>795 175</b>
<b>RESERVES AND LIABILITIES</b>			
<b>Reserves</b>			
Retained income		1 066 545	637 067
<b>Current liabilities</b>			
Trade and other payables	4	147 991	158 108
<b>TOTAL RESERVES AND LIABILITIES</b>		<b>1 214 536</b>	<b>795 175</b>

## STATEMENT OF COMPREHENSIVE INCOME FOR THE YEAR ENDED 28 February 2021

	Notes	2021 R	2020 R
<b>Revenue</b>			
Conference revenue		(11 565)	391 120
Conference costs		-	250 289
		<b>(11 565)</b>	<b>140 831</b>
Membership dues		1 654 706	877 719
		<b>1 643 141</b>	<b>1 018 550</b>
<b>Other income</b>			
Interest received		14 087	9 252
		<b>1 657 228</b>	<b>1 027 802</b>
<b>Expenditure</b>			
Annual report		5 800	5 500
Auditors' remuneration		17 614	18 445
Auditors' remuneration - prior year adjustment			(7 905)
Bank charges		4 604	5 929
Membership meeting costs		-	83 625
Printing and stationery		5 074	3 684
Secretariat fees		1 056 000	1 056 000
Subscriptions		52 621	90 163
Website and communication costs		10 769	12 155
Workshop - trainer & venue costs		75 268	393
		<b>1 227 750</b>	<b>1 267 989</b>
Net profit/ (loss) for the year		429 478	(240 187)
Retained income from prior year		637 067	877 254
		<b>1 066 545</b>	<b>637 067</b>

	2021	2021
	R	R
2. <b>Trade and other receivables</b>		
Accrued Membership Fees Aberdare and LEC	142 253	262 397
Value Added Tax due	205 930	192 642
	<b>348 183</b>	<b>455 039</b>
3. <b>Cash and cash equivalents</b>		
ABSA Call account	22 463	21 381
ABSA Money Market account	843 890	318 755
	<b>866 353</b>	<b>340 136</b>

The Money Market account earns interest at 3.0% (2020: 5.4%).

	2021	2021
	R	R
4. <b>Trade and other payables</b>		
Harris Dowden & Fontaine	18 030	18 445
VdW & Co retainer	3 005	1 173
IERE Event Funding - refer to note 5 below	94 153	-
Education fund	32 804	32 804
Membership fees received in advanced	-	105 686
	<b>147 992</b>	<b>158 108</b>
5. <b>IERE Event Funding</b>		
Opening balance	-	-
Funding received	174 153	-
Expensed - Utility Coach	(80 000)	-
Closing balance	<b>94 153</b>	<b>-</b>

#### 6. **Taxation**

No taxation is provided as the Association is at present exempt from tax in terms of Section 10(1)(d)(iv)(bb) of the Income Tax Act.

# PIESA Virtual Events held in 2021

1

## Electricity Utility Management web training | 24 February - 8 March - PIEASA

Sponsored by IERE, Hosted by PIEASA

- **Industry & Business Overview** - DR Willie De Beer & Tembani Bukula  
*An industry in transition – how to embrace the journey from where we are to the new*
- **Business Models** – Vally Padayachee  
*New thinking, a new approach to business models in the EDI (ESI?)*
- **Legislation, Governance & Regulatory** - Vera Kriel (Adv) & Dr Wolsey Barnard  
*Some future opportunities and challenges*
- **Revenue requirements, Tariffs and charges for the new utility business** – At van der Merwe  
*What do we need to consider?*
- **Revenue Management** – Vera Kriel (Adv) & Philip Stander  
*Battling with revenue management – some practical perspectives*
- **Smart Cities** – Vera Kriel (Adv) & Philip Stander  
*Towards Smarter Cities and towns with platform strategies*
- **The Green revolution and disruptive technologies** - Warrick Pierce (Utility Coach Associate) supported by At van der Merwe

*Disruptive technologies are transforming the status quo. The blue-print for the modern electricity supply industry used to be massive, centralised power plants connected to high-voltage power lines and ultimately distributed to the consumer. Wind and solar PV are modular and can work on a small-scale, allowing for distributed solutions. Technology is changing the way we generate electricity. We should adapt the way we think about electricity.*

*The session will provide an overview of RE technologies, the Impact of distributive technologies (new opportunities and challenges) and Energy planning: national and local IRPs.*

2

## Proposed new business Models in the Power Dx Sector New thinking, a new approach to business models in the EDI (ESI)? | 24 June - PIESA

Participants will be exposed to various potential business models to enable transforming electricity distribution utilities in a developing country to effectively deliver on their service delivery mandate in the context of a Just Energy Transition.

3

## TID Rollover for STS Prepayment | 27 July - PIESA

We estimate there are approximately 70 million meters that are currently installed globally, includes 6 million in Eskom and 3 million in SA munics. All of these 70 million meters will definitely be affected by the rollover. If utilities are reasonably proactive, then it is possible that all new meters being installed can be manufactured on the new base date of 2014, thus avoiding the 2024 event for these newly installed meters.

It could well be that approximately 70 million meters in total will be affected between now and 2024. Y2K was a possibility in the year 2000 and it did not happen as we all know - however if we do not address the TID2024 challenge the consequences of not doing so will definitely happen."

### About the Presenter:

Don Taylor was the inventor of the first integrated solid state prepayment meter in the world, in 1985. This self-employed South African is also still engaged in standardisation work.

4

## Just energy transition - Policies & Challenges | 14 October - PIESA

- IPCC 6th Assessment Report presented by **Dr Troy Govender**, Chair, PIESA Environmental Management and Safety Advisory Committee
- Policies for a just (energy) transition in South Africa presented by **Gaylor Montmasson-Clair**, Senior Economist, Sustainable Growth, Trade and Industrial Policies Strategies (TIPS)
- Challenges for a just energy transition presented by **Daniel Chavez**, Economic Justice Programme, Transnational Institute (TNI)

## PIESA Members were also invited to relevant webinars hosted by SARPA (South African Revenue Protection Association)

1

### The challenge of minimizing revenue losses without normal field operations | 27 January - SARPA

SARPA hosted a panel, made up of industry experts from the USA, Europe, Africa and South Africa

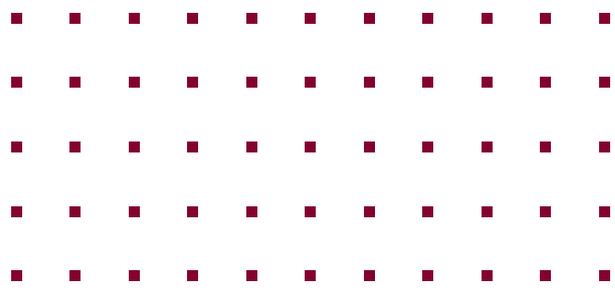
2

### Teamwork and combined operations will ensure revenue enhancement in Municipal entities | 24 February - SARPA & IMPSASA

3

### Survival of the Fittest - How international Associations and utilities are winning their revenue protection battles | 29 September - SARPA





**PIESA**  
THE POWER INSTITUTE FOR  
EAST & SOUTHERN AFRICA

