

Final Program

(as performed)

The 2019 General Meeting and PIESA-IERE South Africa Forum

“Electricity & the 4th Industrial Revolution – an Africa perspective”



Sun City, South Africa

October 28 - 31, 2019

Sun City, South Africa

Organized by PIESA and IERE

Message from IERE Chair

I welcome you all to the 2019 General Meeting and PIESA-IERE South Africa Forum to be held in South Africa. It will be a meeting platform to share ideas and experiences by electricity utility executives, operational staff, research professionals and other stakeholders from Africa and the international community to evaluate the trends in the supply of electricity in support of accelerated electrification.

The Fourth Industrial Revolution's technologies, such as artificial intelligence, autonomous vehicles and drones, the Internet of Things, advanced materials, biotechnology are particularly relevant. Many are already showing promise at reshaping a number of sectors, including transport, energy, waste, water, and cities, and change will only accelerate. Energy utilities can harness these pioneering technologies, combined with each other and with new business models, to not only enhance economic productivity but to reduce environmental impact and increase social wellbeing, with particular reference to the need of stimulating reliable, sustainable and affordable electricity supply to the African continent.

Electricity is a catalyst for economic and social development, and therefore the need to increase household access is a key challenge for us all, and Africa offers enormous opportunities for growth in the areas of technology solutions and in particular 4IR technologies in the area of strong and reliable technology to manage a network – or simply to run a billing operation efficiently and I believe the role of smart systems, the IOT will have a key role to play.

The Forum's theme "Electricity and the 4th Industrial Revolution – an African Perspective" is totally appropriate. The need to understand the challenges that face our business over the next decades is an imperative and, as such, the sharing of knowledge, experiences, successes and failures will indeed go a long way in understanding which technology roadmap of the future. With this in mind, I hope that you will join me at the PIESA/ IERE South African Forum to be held at the most beautiful venue of Sun City, South Africa, I believe it will truly be a significant forum and I trust that you will participate, share opinions, challenge each another in order to find the technological solutions that would assist us in the future of a global sustainable electricity future.

The Forum's networking and discussion platforms will explore how utilities can be more efficient in terms of applying and understanding the value added of 4IR and offer cost-effective services through improved infrastructure maintenance, load management, delivery and revenue management choices. Increasing pressure is also exerted on all businesses to take environmental considerations on board in all their operations. Such pressure emanates from a variety of sources: consumers, competitors, pressure groups and local communities. The IERE are proud to be partners with the PIESA whose members' have a broad knowledge of the African challenges. The IERE and PIESA are well placed to build a strong partnership to enhance the technological knowledge base and to engender enthusiasm that will stimulate interest in the topics to be discussed.

Finally, my deepest thanks and appreciation to PIESA for co-hosting and organizing this South Africa Forum.



Gregory Tosen

IERE Chair
PIESA, South Africa



Message from PIESA Chair

The Power Institute for East and Southern Africa (“PIESA”) is delighted and excited to co-host with IERE, the 2019 General Meeting and PIESA-IERE South Africa Forum (“Forum”) to be held at the magnificent Sun City Resort located in the North West Province in the Republic of South Africa from October 28-31, 2019.

PIESA is a voluntary regional power utility association established on 28 February 1998. We aim 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.

Pursuant to giving effect to the above PIESA strives 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.

It’s common knowledge that access to electricity has been a serious challenge in Africa and still continues to be a serious challenge. As reported previously 600 million Africans are not connected to an electrical network. Businesses in most countries in Africa cite access to electricity amongst the two most severe constraints on their operations and business.

The ability and capability of PIESA member countries to raise adequate funding to rollout new and much needed infrastructure is still a serious problem. Backlogs in respect of maintenance and refurbishment of essential power supply and power delivery infrastructure still continue to plague the sector that PIESA operates in.

We note that the theme, “Electricity & the 4th Industrial Revolution – an Africa perspective” chosen for the Forum will generate excellent papers, presentations and discussions that will contribute to addressing the challenges as alluded to in the aforementioned.

The electricity utility sector in particular is also being and still going to be impacted by the fourth industrial revolution (“4IR”) in the years ahead so much so that the majority of them will have to

rethink their business models to remain inter alia viable. Unlike the first (1IR), second (2IR) and third (3IR) industrial revolutions the impact of the fourth industrial revolution (4IR) is going to be astronomical or exponential to say the least. PIESA will be focusing going forward on 4IR emerging technologies to especially stimulate and accelerate electrification in PIESA member countries for growth and development.

We also want to acknowledge and recognise the Top 20 “emerging technologies” and Top 5 “fringe technologies” as identified by IERE in its excellent “IERE TECHNOLOGY FORESIGHT 2020 REPORT”. We will factor the findings of this Report into PIESA’s strategies and planning where possible

For the benefit of our international visitors and delegates, history was made in 1979 when Sun City was opened to become the best holiday resort in South Africa, and for good reason. Home to the Valley of Waves and sprawled along the border of the Pilanesberg National Park, Sun City Resort enjoys the fine distinction of being the only surf-and-safari destination within a two-hour drive of landlocked Johannesburg. Sun City’s selection of boardrooms and breakaway conference rooms provide a unique environment to host world class conferences, workshops and more. Delegates can expect state-of-the-art technology, ultra-modern amenities, and world-class facilities when attending the Forum.

In conclusion I want to on behalf of the membership of PIESA and myself welcome all delegates to The 2019 General Meeting and PIESA-IERE South Africa Forum. We trust and hope that you will enjoy your stay at Sun City and find the networking and information derived at the Forum value adding. I look forward to personally meeting each delegate at the Forum.



Eng. Bukhosi Siso
BSc (Elect), MSc, MBA, CEng, FzweIE, MIET, MistLM
Chairperson of the PIESA Board



Electricity & the 4th Industrial Revolution – an Africa perspective

About the theme

What is the 4th Industrial Revolution?

In a nutshell, it is the advancement and emergence of new technologies that is ushering in a new era that sees a greater impact of digitization on our lives, in ways that are new and unanticipated.

As a quote from an article on the World economic forum website, “The Fourth Industrial Revolution can be described as the advent of “cyber-physical systems” involving entirely new capabilities for people and machines. While these capabilities are reliant on the technologies and infrastructure of the Third Industrial Revolution, the Fourth Industrial Revolution represents entirely new ways in which technology becomes embedded within societies and even our human bodies.”

With emerging technologies moving at a rate of knots, the question then is, what do we want these technologies to do for us and what impact will it have on all of us?

As the novelist William Gibson famously said: “The future is already here – it's just not very evenly distributed.” Indeed, it is time to see an even distribution of this potential. It is time for Africa!

Who should attend?

The Forum is intended for experts actively involved in the selected themes, from IERE members and non-members, as well as all those interested in the evolution of the electrical power industry and the technology development and business development opportunities associated to this evolution. IERE will invite prominent speakers for keynote speeches.

Outline Schedule:

| | | |
|-----------|------------------|---|
| Monday | October 28, 2019 | Welcome Reception (In the evening) |
| Tuesday | October 29, 2019 | The 2019 General Meeting and PIESA-IERE South Africa Forum (Day 1), Official Dinner |
| Wednesday | October 30, 2019 | The 2019 General Meeting and PIESA-IERE South Africa Forum (Day 2) |
| Thursday | October 31, 2019 | Safari Tour (Optional) |

Session 1

Theme: Evolving 4IR technologies and its effect on the customer

There is no doubt digital transformation has blurred the line between man and machine, but in the process, it has also created countless opportunities to engage and assist customers. As the Fourth Industrial Revolution continues to evolve, the key to business success will be evolving simultaneously in order to provide a revolutionary customer experience. IoT, for example, is in the early stages of maturity, and most customers have yet to unlock the full potential and functionality of connected devices.

Potential topics include:

1. Disruptive technologies
2. The internet of things (IoT)
3. Artificial intelligence (AI)
4. Advanced robotics
5. Distributed manufacturing

Session 2

Theme: Asset Management – let's get smart about it

Distribution power companies are subject to increasing quality, safety and environmental constraints that, in a highly competitive arena, call for the maximization of asset reliability, efficiency and flexibility, while operation and maintenance costs are reduced. To this end distribution energy companies are adopting an intelligent asset management approach to asset management. Smart or intelligent asset management is a cutting-edge technology that is being increasingly adopted by various industries, and with future inclusion of Industrial Internet of Things (“IIOT”), it is deemed as a sheer necessity in a manufacturing facility where downtime / slowdown affects the bottom line results.

Potential topics include:

1. Smart intelligent systems for effective asset management
2. Smart asset management systems
3. Cyber physical systems
4. Big Data, Cloud Computing and M2M communication.
5. Industrial Internet of Things (“IIOT”)

Session 3

Theme: Distributed Renewable Energy Technologies: Are we ready?

At the distribution level, increasing numbers of renewables and Distribution Energy resources (“DERs”) in general present a host of issues. One of the major challenges is that distribution system operators must transition from managing the safety and reliability of a system with a limited number of energy producers and unidirectional and predictable flow from substations to customers to a system with power flows from many sources at varying times of day and in different directions. These changes mean not only greater operational complexity, but also more complex maintenance and emergency operations. The result will be needed modifications in the design and operation of the distribution system and investments in new or upgraded circuits as well as additional tools, sensors and communication systems.

Potential topics include:

1. Impact of DER’s on a utility’s revenues
2. Evolving business models to accommodate increasing ingress of renewables on a utility’s business
3. The need for an effective regulatory environment to accommodate DER’s
4. Funding of renewable energy technologies
5. Safe grid integration of DER’s

Session 4

Theme: Advanced distribution automation in the 4IR era

The goal of Advanced Distribution Automation (“ADA”) is real-time adjustment to changing loads, generation, and failure conditions of the distribution system, usually without operator intervention. This necessitates control of field devices, which implies enough information technology (IT) development to enable automated decision making in the field and relaying of critical information to the utility control centre. The IT infrastructure includes real-time data acquisition and communication with utility databases and other automated systems. Accurate modelling of distribution operations supports optimal decision making at the control centre and in the field. In the era of the 4IR we are going to see a significant convergence of Operating Technologies (“OT”) and Information Technologies (“IT”) underpinned by smart communications to achieve the goal of ADA.

Potential topics include:

1. Data preparation and analytics
2. Computer-aided simulation
3. Distribution operation model and analysis
4. Fault location, isolation, and service restoration
5. Advanced Voltage and Var Control

Session 5

Theme: 4IR's impact on revenue collection and non-technical losses

The revenue model on which utility businesses are based on is under threat from the shifting industry norms. The 4th industrial revolution is underway and already utilities are witness to digitalisation, decarbonisation and decentralisation – all affecting their traditional revenue collection strategies and non-technical losses mitigation approaches.

Potential topics include:

1. Smart meters
2. Evolving business models
3. Deflection of customers from the grid
4. Impact of Distributed energy resources on a utilities revenue
5. Innovative tariff models

Program:

Welcome Reception

Monday, October 28, 2019
Sun City Convention Centre, Seers Court

18:00 - Registration
18:30 - 20:30 Welcome Reception

The 2019 General Meeting and PIESA-IERE South Africa Forum

- Day 1 -

Tuesday, October 29, 2019
Sun City Convention Centre, Warriors Hall

Overall Chair : Mr. Vally Padayachee (Executive Officer, PIESA, South Africa)

08:30 – 09:00 Registration

Opening Session:

09:00 – 09:15 O-1 Opening Address
Mr. Gregory Tosen (IERE Chair)

(Official Dinner) O-2 Welcome Address
Eng Bukosi Siso (Chairman, PIESA)

Keynote Address

09:30 – 10:00 K-1 ‘The use smart technologies to mitigate revenue collection challenges especially in African electricity distribution utilities’
Eng. Dr. Alfred Kaponda (ESCOM, Malawi & PIESA Board member)

10:00 – 10:30 K-2 ‘Sustainability of (renewable) electricity production’
Prof. Dr. Jan Mertens (Chief Scientific Officer, ENGIE Research, ENGIE, Belgium)

10:30 – 11:00 Coffee Break

General Session

11:00 – 11:15 G-1 The report of IERE activities
Mr. Gregory Tosen (IERE Chair)

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|---------------|-----|---|
| 11:15 – 11:30 | G-2 | The report of PIESA Activities and TIS <i>Mr. Vally Padayachee (Executive Officer, PIESA, South Africa)</i> |
| 11:30 – 11:45 | G-3 | Methanol Ageing Marker Project (Phase 2) <i>Prof. Dr. Jan Mertens (Chief Scientific Officer, ENGIE Research, ENGIE, Belgium)</i> |
| 11:45 – 13:25 | | <u>Lunch break</u> |

Session 1 : Evolving 4IR technologies and its effect on the customer

Chair person: Dr. Jie Huang (Deputy manager, Senior Engineer, New Technology Department, NARI Group Corporation, China)

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|---------------|------|--|
| 13:25 - 13:50 | S1-1 | ‘A deep learning based obstacle detection and distance measurement for substation patrol robot’ <i>Dr. Hongsheng Xu</i> <i>(Senior Engineer, NARI Research Institute, NARI Group Corporation, China)</i> |
| | S1-2 | Cancelled |
| 13:50 - 14:15 | S1-3 | ‘Application and Development of Artificial Intelligence in Power Equipment State Evaluation and Maintenance’ <i>Mr. Ji Qiao</i> <i>(Engineer, Artificial Intelligence Application Research Institute Department, CEPRI, China)</i> |
| 14:15 - 14:40 | S1-4 | ‘TID Rollover’ <i>Mr. Franco Pucci</i> <i>(STS Association, South Africa)</i> |
| 14:40 – 15:05 | S1-5 | ‘Readiness Index for Indonesian Power Plant toward Industry 4.0’ <i>Mr. Harry Indrawan,</i> <i>(Manager, Research and Assessment Technology Power Generation And Energy, PT. PLN (Persero) Reseach Institute, Indonesia)</i> |
| 15:05 - 15:30 | S1-6 | ‘Artificial Intelligence for the Detection of Electricity Theft and Irregular Power Usage in the African Electricity market’ <i>Mr. Keith Katyora</i> <i>(Electrical Engineer, Aurecon, South Africa)</i> |
| 15:30 - 16:00 | | <u>Coffee Break</u> |

Session 2 : Asset Management – let’s get smart about it

Chair person: Mr. Hans-Jürgen Behnke (POA External Operation & Maintenance, Business Development & Sales, RWE TI, Germany)

- 16:00 - 16:25 S2-1 ‘Current market developments and their effects on asset flexibilities’
*Mr. Hans-Jürgen Behnke
(POA External Operation & Maintenance Business Development & Sales, RWE TI, Germany)*
- 16:25 - 16:50 S2-2 ‘A Real-world Dataset for Automatic Visual Diagnosis of Power Transmission lines’
*Mr. Min-Hee Choi
(Senior Researcher, Digital Solution Lab., KEPCO RI, Korea)*
- 16:50 - 17:15 S2-3 ‘Application of RFID System for Managing Repair Parts of Underground Power Cables and Accessories’
*Mr. Yuya Manabe
(Senior Researcher, Electric Power R&D Center, R&D Division, Chubu EPCO, Japan)*
- 17:15 - 17:40 S2-4 ‘4IR technologies Application on KEPCO Power Distribution equipment maintenance’
*Mr. Gi-Dae Oh
(Senior Researcher, Smart Power Distribution Laboratory, KEPCO RI, Korea)*
- 17:40 - 18:05 S2-5 ‘High Efficiency Status Evaluation for Main Equipments based on Cyber Physical Systems in Distribution Network’
*Dr. Keyan Liu
(Manager, Power Distribution Department, CEPRI, China)*
- S2-6 Cancelled
- 18:05 - 18:30 S2-7 ‘MR_System Solutions for Asset Management’
*Mr. Kobus de Villiers
(Managing Director, Reinhausen, South Africa)*
- 19:00 – 21:30 Official Dinner

The 2019 General Meeting and PIESA-IERE South Africa Forum

- Day 2 -

Wednesday, October 30, 2019
Sun City Convention Centre, Warriors Hall

Session 3 : Distributed Renewable Energy Technologies: Are we ready?

Chair person: Dr. Tomohiko Ikeya (Associate Vice President, Materials Science Research Laboratory, CRIEPI, Japan)

- 08:00 – 08:25 S3-1 ‘Secondary battery energy storage systems for enabling use of renewable energy to realize a zero-CO₂-emission society’
Dr. Tomohiko Ikeya
(Associate Vice President, Materials Science Research Laboratory, CRIEPI, Japan)
- 08:25 – 08:50 S3-3 ‘Development a System Dynamic Model for Utilities Revenue Evaluation under Distributed Energy Resources’
Dr. Desmond Ighravwe
(University of Johannesburg, South Africa)
- 08:50 – 09:15 S3-2 ‘The future of infrastructure: Challenges & opportunities for utility companies’
Dr. Felix Cebulla
(Senior Expert, Corporate Technology, Strategy & Technology, innogy SE, Germany)
- 09:15 – 09:40 S3-4 ‘The Grid Interconnection Study of Renewable Energy in the Distribution system to ensure Safe Grid Integration: Case Study of PV Grid Connected in Indonesia’
Mr. Dimas Bangun Fiddiansyah
(Division Project Management Office (PMO) & Manager of Project Management and Integration for Sumatera Projects, PT. PLN (Persero), Indonesia)
- 09:40 – 10:05 S3-5 ‘Status and Future of Renewable Energy Technology Development and Application in KEPCO’
Mr. Seong Jegarl
(Director & Chief Researcher, Renewable Energy Research Group, KEPCO RI, Korea)
- 10:05 – 10:35 Coffee Break

Session 4 : Advanced distribution automation in the 4IR era

Chair person: Mr. Seong Jegarl (Director, Renewable Energy Research Group, KEPCO RI, Korea)

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|---------------|------|--|
| 10:35 – 11:00 | S4-1 | <p>‘Plant simulation, visualization and control platform based on OPC and Simatic WinCC’ <i>Rotimi Agbebi</i> <i>(Specialist Engineer (Control and Automation), Siemens, South Africa)</i></p> |
| 11:00 – 11:25 | S4-2 | <p>‘Improvement of Power system Analysis Tools (CPAT) for planning, operation and control/protection studies under a large penetration of photovoltaic generations’ <i>Mr. Hideo Koseki</i> <i>(Senior Research Scientist, System Engineering Research Laboratory, CRIEPI, Japan)</i></p> |
| 11:25 – 11:50 | S4-3 | <p>‘The Implementation of Smart Asset Management System to Monitor the Health Index of Power Distribution Assets: Case Study of PLN’s EAM in Indonesia’ <i>Mr. Dimas Bangun Fiddiansyah</i> <i>(Division Project Management Office (PMO) & Manager of Project Management and Integration for Sumatera Projects, PT. PLN (Persero), Indonesia)</i> <i>Mr. Job Syam</i> <i>(Division Information Technology System & Manager of IT Development in Transmission, Distribution and Customer Service, PT. PLN (Persero), Indonesia)</i></p> |
| | S4-4 | Cancelled |
| | S4-5 | Cancelled |
| 11:50 – 13:30 | | <u>Lunch break</u> |

Session 5 : 4IR’s impact on revenue collection and non-technical losses

Chair person: Mr. Vally Padayachee (Executive Officer, PIESA, South Africa)

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|---------------|------|--|
| 13:30 – 13:55 | S5-1 | <p>‘The Impact of the 4IR on the electricity distribution utility business’ <i>Mr. Vally Padayachee</i> <i>(Executive Officer, PIESA, South Africa)</i></p> |
| 13:55 – 14:20 | S5-2 | <p>‘Security Testing for Preventing Backdoor Threat in Smart meter Implementation in Indonesia’ <i>Ms. Astri Kartika El Nur</i> <i>(IT Strategy Manager, ICT Division, PT. PLN (Persero), Indonesia)</i></p> |

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- 14:20 – 14:45 S5-3 ‘Carbon Market Risk Analysis & Defense based on Hybrid Simulation - a Perspective from Cyber Physical Social Systems in Energy’
Dr. Jie Huang
(Deputy Department Manager, Senior Engineer, NARI Power System Stability Control Company, NARI Group Corporation, China)
- S5-4 **Cancelled**
- 15:10 – 15:40 *Coffee Break*
- 15:40 – 16:05 S5-5 ‘Incorporating Embedded Generation onto Municipal Networks’
Ms. Poonam Lutchman
(Solution Architect - Digital Power Solutions, Schneider Electric, South Africa)
- (October 29)** S5-6 ‘Is the technological revolution opening up new avenues for rogue entities to exploit?’
Rens Bindeman
(Technical Advisor, SARPA, South Africa)
- 16:30 – 16:55 S5-7 ‘Pilot project, migration of an in-home common base prepayment metering solution to a split pre-payment smart metering online solution’
Harold Hayes
(Global Head - Utility Business Solutions, Smart Energy, Landis+Gyr (Pty) Ltd)
- Closing Remarks**
- 16:55 - 17:00 *Eng. Bukhosi Siso (Chairman, PIESA)*
- 17:00 - 17:05 *Dr. Takao Watanabe (Secretary General, IERE Central Office)*

Safari Tour (optional) - Day 3 -

Thursday, October 31, 2019

Sun City Convention Centre, Pilanesberg National Park

Around 06:30 Departure at Suncity Hotel
Around 10:00 Return to Suncity Hotel

- Time schedule may be changed.
- Please register and finish payment by September 27 with Forum registration

Reference WEBSITE from Mankwe GAME TRACKERS

<https://gametrackers.activitar.com/services/48?adults=1&children=0&date=2016-05-21>

Activity Description

Gametrackers invites you to discover the awe-inspiring beauty and serenity of the Pilanesberg National Park. Embark on one of our 3 hour Scheduled Game Drives with a registered field guide who will convey extensive knowledge on the park and its inhabitants. These game drives will be conducted in 25-seater open vehicles with other guests. Pilanesberg National Park is Malaria free and accommodates virtually every mammal of Southern Africa including the “Big Five” (namely Lion, Leopard, Rhino, Elephant & Buffalo)

Arrangements

Duration 3 hours

When Seven days a week, all year round.

Where Gametrackers Desk - situated in the Welcome Centre at Sun City Resort.

Weather No weather restrictions. Activity will always go out even if it rains.

What to Wear Comfortable outdoor clothing. Always bring a jacket/jersey along, and for the cooler winter months (May to August) a beanie/scarf and gloves also recommended.

Things to Bring We recommend that you bring beverages, binoculars and camera.

Guests or Spectators All guests to be at the departure point, 15 minutes prior to the scheduled departure time.

Inclusions

This service includes a guided tour through the Pilanesberg National Park with a registered field guide.

Duration of the Game Drive: ±3 hours

Exclusions

Beverages are excluded from this service. Guests are welcome to bring their own beverages.





Call for Papers(closed)

<<**Abstract Submission: No later than July 15, 2019**>>

You are kindly invited to submit abstracts for the Oral Session or Poster Session for the 2019 South Africa Forum by e-mail.

to: **register (at) iere.jp** [Please substitute “ (at) ” with “@”]

IERE Central Office

2-11-1 Iwado Kita, Komae-shi, Tokyo 201-8511, Japan

Phone: +81-3-5438-1717 Fax: +81-3-3488-5100

As for the **format of the abstract**, please refer to “Events” page on IERE website.

<https://www.iere.jp/events/forum/2019-southafrica/forspeakers.html>

- Abstract is uploaded to IERE's website and open to the public after the Forum.
- The medium of communication is English.

<< **Presentation files Submission: No later than October 4, 2019** >>

You are kindly requested to submit presentation files (Powerpoint) of the Oral Session and Poster Session for the 2019 South Africa Forum by email by October 4, 2019.

- Presentation file will be uploaded to IERE website and opened to all participants before the Forum.
- The medium of communication is English.

Submission Items & Deadlines

- IERE Members & Non-Members other than Africa -

For Participants [including speakers]

| Items | Format No. | Deadline | To: |
|----------------------------|------------|---|---|
| Registration Form | 1 | September 27, 2019 | register(at)iere.jp [Please substitute (at) with @] |
| Visa Form (If necessary) | 5 | September 27, 2019 (It takes a few weeks to issue) | Ditto |
| Registration Fee | — | September 27, 2019 | Please refer to Next Page |
| Safari Tour Fee [optional] | — | September 27, 2019 | Ditto |

The formats (No.1 and 5) can be downloaded from

URL: <https://www.iere.jp/events/forum/2019-southafrica/register.html>

For Speakers

| Items | Format No. | Deadline | To: |
|--|------------|-----------------|--|
| Abstract | 2 | July 15, 2019 | register(at)iere.jp [Please substitute (at) with @.] |
| Speaker's Information | 3 | October 4, 2019 | |
| Copyright Permission | 4 | October 4, 2019 | |
| Presentation Slides (PowerPoint file) | — | October 4, 2019 | |

The formats (No.2 to 4) can be downloaded from

URL: <https://www.iere.jp/events/forum/2019-southafrica/forspeakers.html>

Speakers are kindly requested to submit their Speaker's Information and Copyright Permission and their Presentation Slides (PowerPoint file) **by October 4, 2019**.



Registration

- IERE Members & Non-Members other than Africa -

(a) On-line Registration

URL: https://www.iere.jp/cgi-bin/event_form/19GM/event_form_entry.cgi

or

(b) Please submit a registration form (Format 1) to IERE Central Office by e-mail.

Deadline: September 27, 2019

- PIESA Members & Non-Members from Africa –

Deadline: August 31, 2019

(a) Paying in South African RANDES (R)

URL: <https://express.vdw.co.za/pay/?id=ea7740fe79cde87213c15a9802ac45b3c184d900>

(b) Paying in US DOLLARS(US\$)

URL: <https://express.vdw.co.za/pay/?id=de467a162f47eff434ba780bfb07d45f765a1a73>

Registration Fee

Please make payment of following fee **No later than September 27, 2019** by credit card payment or bank transfer.

The Registration fee will cover attendance at both conference days (include lunches & refreshments at coffee breaks), welcome reception on October 28, official dinner on October 29 and conference package:

When participation is canceled irrespective of the reason after September 27, 2019, Registration Fee might be charged or not be reimbursed.

IERE members: US\$ 800.-

Non-Members other than Africa: US\$ 950.-

Academic participants: US\$ 550.-

PIESA members: US\$ 600.-

Non-Members from Africa: US\$ 950.-

Recommended options

Safari Tour(optional): US\$ 50.-



Payment

- IERE Members & Non-Members other than Africa -

On-line Credit Card Payment and Bank Transfer are available.

Deadline: September 27, 2019

(a) On-line Credit Card Payment

If you prefer using your credit card for the payment of registration fee, please contact to this URL: https://www.iere.jp/Payment/paypal_19GM.html

(b) Bank Transfer *

| | | | | | | | | | | | |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|
| Name of the Bank: | MUFG Bank, Ltd. | | | | | | | | | | |
| Name of the Branch: | Seijo branch | | | | | | | | | | |
| Name of the account: | IERE | | | | | | | | | | |
| Account Number: | 0068198 | | | | | | | | | | |
| Bank address: | 15-1 Seijo 6-chome, Setagaya-ku, Tokyo, 157-0066 JAPAN | | | | | | | | | | |
| SWIFT code: | <table border="1"><tr><td>B</td><td>O</td><td>T</td><td>K</td><td></td><td>J</td><td>P</td><td></td><td>J</td><td>T</td></tr></table> | B | O | T | K | | J | P | | J | T |
| B | O | T | K | | J | P | | J | T | | |

* Remittance charge, Lifting charge, Correspondent charge and other charges should be paid by participants.

- PIESA Members & Non-Members from Africa -

Please refer to the following website. (To be determined)

Visa

For participants from some countries needing a Visa to enter South Africa, please consult with travel agent in your country for the details. For latest status and further details, please consult travel agencies in your local area.

If you need an Invitation Letter*, please refer to 'Invitation Letter for Visa' (Format 5).

* PIESA may be able to issue an invitation letter for participants who need to apply for Visa. It may take a few weeks to complete the procedures in PIESA, so please submit the form as soon as possible.

Disclaimer: PIESA reserves the right to fulfill or decline, at PIESA's discretion, requests for letters of invitation for visa application support purpose.

Airport

The nearest international airport to the venue is O.R. Tambo International Airport (Airport Code: JNB), which is located about 200 km southeast of the venue. It takes about 3 hours by car.

For Airport information, please refer to

<http://www.airports.co.za/airports/or-tambo-international>



Airport Transfers

Airport pick-up service of the travel agency recommended by Sun City Resort:

[mankwegametrackers.co.za]

<https://www.mankwegametrackers.co.za/>

Mail: suncity@mankwegametrackers.co.za

Tel: +27 14 495 2980 Ext 114

Sun City Resort, 1 Sun Village Road, Sun City, Pilanesberg, 0310

[Inhlobo Tours & Services]

<http://www.inhlobotours.com/>

Mail: info@inhlobotours.com

Mobile +27 76 044 7621 Tel +27 12 700 3011

246 Pretorius Street, Office 406 Protea Towers, Pretoria 0002

Conference Venue & Accommodations

Conference Venue

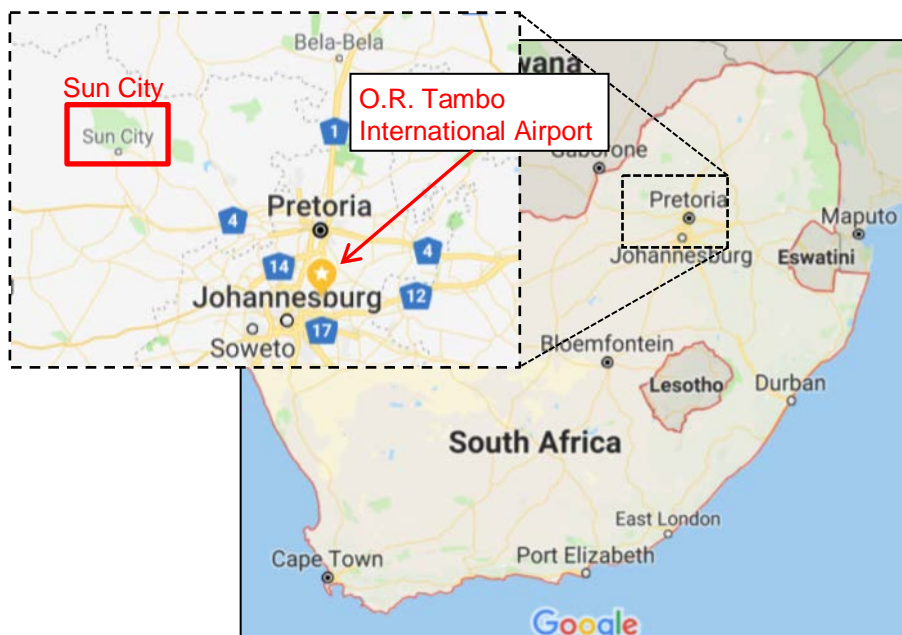
Sun City Convention Centre, South Africa

Location: Sun City Resort, 0316, North West Province, South Africa

Website: <http://www.suninternational.com/sun-city/>



Location of Sun City



<https://goo.gl/maps/kxx4RVyxdC2SVjTf9>

Accommodations

Sun City Resort, South Africa (Various hotel options at the resort)

Location: Sun City Resort, 0316, North West Province, South Africa

Website: <http://www.suninternational.com/sun-city/>

Discounted group rates are available.

Please send Room Reservation Form directly to Sun City Resort as below.

URL: <https://www.iere.jp/events/forum/2019-southafrica/DLfiles/PIESA2019BookingForm.pdf>

- PIESA/ IERE don't take any responsibility in room reservation of each participant.
- No room block is set at the hotel. Early reservation is recommended.
- For further details as to Guarantee & Cancellation Policy etc., please confirm the Hotel.



Soho Hotel in Sun City Resort



CASCADES Hotel in Sun City Resort



Format 1

REGISTRATION FORM

The 2019 General Meeting and PIESA-IERE South Africa Forum October 28 - 31, 2019
Sun City, South Africa

Please type at appropriate boxes, then send this form **September 27, 2019**

via email to: IERE Central Office: **register(at)iере.jp** [Please substitute (at) with @] / Fax: +81-3-3488-5100

| | | |
|--|---|----------------|
| 1. Name | <input type="checkbox"/> Prof. <input type="checkbox"/> Dr. <input type="checkbox"/> Mr. <input type="checkbox"/> Ms. <input type="checkbox"/> Other, Please specify: | |
| | First Name | Family Name |
| 2. Position, Department | | |
| 3. Company/Organization | | |
| 4. Address | Zip Code | Country/Region |
| 5. Contact Information | E-mail | |
| | Phone Number | |
| | Fax Number | |
| 6. I will contribute to a presentation | <input type="checkbox"/> Yes <u>Title:</u> <input type="checkbox"/> No | |
| 7. Registration Fee [October 28-31] | [Participants including speakers should pay registration fees.] <input type="checkbox"/> USD 800 : IERE Member <input type="checkbox"/> USD 950 : Non-IERE Member <input type="checkbox"/> USD 550 : Academia | |
| 8. Welcome Reception attendance [October 28] not Mandatory | <input type="checkbox"/> Yes (Included in Registration Fee) Number of Accompanying Person if you have: ___ person(s) (add USD 60 per person) <input type="checkbox"/> No | |
| 9. Official Dinner attendance [October 29] not Mandatory | <input type="checkbox"/> Yes (Included in Registration Fee) Number of Accompanying Person if you have: ___ person(s) (add USD 60 per person) <input type="checkbox"/> No | |
| 10. Safari Tour (Optional) [October 31] | <input type="checkbox"/> Yes (USD 50) Number of Accompanying Person if you have: ___ person(s) (add USD 50 per person) <input type="checkbox"/> No | |
| 11. Payment Amount | Total: USD _____ | |
| 12. Payment Method [to be completed by September 27] | <input type="checkbox"/> Credit Card: https://www.iere.jp/Payment/paypal_19GM.html <input type="checkbox"/> Bank Transfer * IERE Central Office will send you the invoice. | |
| 13. Invitation Letter for Visa | <input type="checkbox"/> I need an invitation letter for Visa application. *Please submit the `Format 5` to IERE Central Office by e-mail by September 27, 2019. <input type="checkbox"/> No | |
| 14. Information from IERE | Do you agree with receiving e-mail notice on future activities/IERE E-mail Magazine from IERE Central Office? <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 15. Personal Data | Do you agree to disclose your personal data for the participants list of this forum? <input type="checkbox"/> Yes <input type="checkbox"/> No | |

Central Office may enclose 'Participants list' in the conference bag to facilitate communication among participants. The list will contain 1. Name, 2.Position, Department, 3.Company/ Organization etc., 4.E-mail address, 5. Country/ Region of this format.

Invitation Letter for Visa

If participants need an invitation letter, please type and fill out the form and send to: IERE Central Office at Email: register(at)iере.jp [Please substitute (at) with @].

| | | | |
|---|---|--------------|--------------|
| <input type="checkbox"/> I need an invitation letter for Visa application. * PIESA may be able to issue an invitation letter for participants who need to apply for Visa. It may take a few weeks to complete the procedures in PIESA, so please submit the form as soon as possible. Disclaimer: PIESA reserves the right to fulfill or decline, at PIESA's discretion, requests for letters of invitation for visa application support purposes. | | | |
| Name on passport | First Name: | Middle Name: | Family Name: |
| Gender | <input type="checkbox"/> Male <input type="checkbox"/> Female | | |
| Nationality | | | |
| Date of birth | | | |
| Passport No. | | | |
| Occupation | | | |
| Company/ Organization etc. | | | |
| Expected date of entry | | | |
| Duration of stay | | | |
| Expected date of departure | | | |
| Colloquium Participation | <input type="checkbox"/> October 28, 2019 Welcome Reception | | |
| | <input type="checkbox"/> October 29, 2019 PIESA-IERE South Africa Forum (Day 1) | | |
| | <input type="checkbox"/> October 30, 2019 PIESA-IERE South Africa Forum (Day 2) | | |
| | <input type="checkbox"/> October 31, 2019 Safari Tour | | |

IERE Members List (as of October 12, 2019)

| | | | |
|---------------|------------------|-------------------------|---------------------|
| Australia | CS Energy Ltd. | CSIRO | |
| Canada | Hydro-Québec | Powertech Labs Inc. | |
| China | CEPRI | GPG | NARI |
| France | Enedis | ENGIE | |
| Germany | EnBW | innogy SE | RWE TI |
| Hong Kong SAR | CLPRI | | |
| Indonesia | PLN | | |
| Iran | NRI | | |
| Japan | Chubu EPCO | Chugoku EPCO | CRIEPI |
| | FEPC | Fuji Electric Co., Ltd. | Hitachi |
| | Hokkaido EPCO | Hokuriku EPCO | IHI |
| | J-POWER | JAPC | Kansai EPCO |
| | Kyushu EPCO | MHPS | Mitsubishi Electric |
| | NGK | Sumitomo Electric | Shikoku EPCO |
| | Tohoku EPCO | TEPCO | TOSHIBA |
| Korea | Hyundai Electric | KEPCO | KERI |
| | KOEN | KOMIPO | KOSPO |
| | KOWEPO | LSIS | |
| Malaysia | TNB | | |
| Mexico | INEEL | Prolec GE | |
| Philippines | APC | MERALCO | |
| Singapore | SPPG | | |
| South Africa | Eskom | PIESA | |
| Spain | NATURGY | REE | |
| Taiwan | TPC | | |
| Thailand | EURC* | | |
| U.S.A. | EPRI | SwRI | |

*: Academia



About PIESA

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

The 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.

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

- Electrification
- Non-Technical Loss Reduction
- Environmental and Safety Management
- Standardization

Website: <http://piesa.publishpath.com/>

About IERE

IERE is an organization for exchanging electricity and energy related cutting-edge technologies and R&D information among its members from the electricity & energy supply industry, equipment provider businesses, academic research, government, etc. This unique platform is of great help for executives, senior managers, engineers, and researchers who are responsible for R&D and solutions. It is a worldwide, non-profit organization, established as “International Electric Research Exchange” in 1968.



IERE Central Office
2-11-1 Iwado Kita, Komae-shi
Tokyo 201-8511 JAPAN

Phone: +81-3-5438-1717
Fax: +81-3-3488-5100
<https://www.iere.jp>

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