



Institute of Electrical and Electronic Engineers (IEEE) - SUDAN Subsection  
جمعية مهندسي الكهرباء والالكترونيات - فرع السودان

Section Name: IEEE Sudan Section

Reporting Officer Name: Fay Elhassan, Chair, IEEE Sudan Section

## **IEEE Sudan Office Activities Report for the Year 2024**

### **Overview & General Goals**

Despite the ongoing challenges caused by the war in Sudan, the IEEE Sudan Office has remained dedicated to its mission of supporting local communities through engineering, education, and technology. In 2024, the primary focus has been on restructuring, documentation, and setting up initiatives that cater to the needs of the population, particularly in the context of the crisis.

### **Section Vitality**

- Date of Last Section Elections: Elections were conducted in early 2024, marking the leadership transition, which included the step-down of Prof. Sharif and the nomination of a new Chair.
- Date of Next Section Elections: Planned for early 2026.
- Vice-Chair Practice: Currently, there is a practice of the Vice-Chair automatically becoming the next Section Chair.

### **- Section ExCom Meetings:**

- Several meetings were held throughout the year to manage ongoing initiatives, despite the challenging situation in Sudan. These meetings focused on restructuring the board, volunteer management, and membership development.

### **- Membership Retention & Recruitment Activities:**

- Despite the high cost of memberships for both professionals and students and the challenges with financial transactions due to Sudan's situation, we have prioritized membership retention. We implemented a volunteer recognition system, distributed certificates, and promoted global competitions like IEEE Xtreme.

- Results: Although limited by the current circumstances, we have managed to engage students and professionals through virtual events and online workshops, including collaborative activities like the WIE Strength in Unity Virtual Celebration.

## **Students**

### **- Student Branches in the Section:**

- We are proud to have ten active Student Branches, including the IEEE University of Khartoum SB and Sudan University of Science and Technology SB.

- Newly Formed/Dissolved SBs: A petition for Omdurman Islamic University Student Branch has been pending approval since 2023, but we have not yet received official confirmation.

### **- Student Meetings & Activities:**

- Despite the challenges, virtual workshops were held to engage students across Sudan. We also submitted a proposal for a Local Student Paper Contest to encourage student participation.

- Students are actively preparing for IEEE Xtreme 2024.

## **Affinity Groups**

### **- List of Affinity Groups:**

- IEEE Women in Engineering (WIE) Sudan Section, IEEE Young Professionals (YP) Sudan Section (pending petition), and IEEE SIGHT Sudan Section (in progress).

### **- Activities Supporting Affinity Groups:**

- A key highlight was the Strength in Unity Virtual Celebration, a collaborative event with IEEE WIE Turkey and IEEE WIE Spain, aimed at celebrating and empowering women in engineering globally.

## **Chapters**

### **- List of Chapters:**

- The IEEE Power and Energy Society (PES) Sudan Chapter petition was submitted in 2024.

### **- Chapter Activities:**

- PES Sudan has been working since 2020 actively till this year we finally submitted a petition and conducted workshops focusing on supporting communities across Sudan with energy-related initiatives.

### **- Reporting & Rebate:**

- Chapters have been diligent in reporting on time, qualifying them for rebates.

## **Industry**

### **- Industry Engagement Activities:**

- Due to the ongoing war, engagement with industry has been limited. However, we are exploring partnerships for future collaboration, focusing on projects that can help in Sudan's recovery.

## **Diversity, Equity, and Inclusion**

### **- Diversity Metrics:**

- Gender: Through WIE initiatives, we've increased participation from women.
- Age: We maintain an inclusive approach, engaging students, young professionals, and senior members.
  - New Initiatives: The Strength in Unity event marked a major milestone in promoting diversity and inclusion across global sections.
- Progress: Efforts continue to ensure inclusivity across various demographic categories despite challenges.

## **Activities Since the Last Report**

### **- What Worked Well:**

#### **1. Leadership Transition & Board Restructuring**

Early in the year, the IEEE Sudan team focused on documenting existing teams, restructuring the board, and preparing for leadership elections. This process included the step-down of Prof. Sharif and the nomination of a new chair Fay Majid Elhassan.

The groundwork was laid for the creation of a new board and assigning volunteers to ensure smooth transitions and continuity of activities.

#### **2. Initiation of Projects Targeting Youth & Education**

The program team worked on developing projects aimed at supporting children in Sudan, addressing their education and well-being in the context of the country's difficult situation. This included partnerships and efforts to become one of the pilot countries for the IEEE YESIST12 program.

#### **3. Power & Energy Society (PES) Report & Proposal**

The PES society in Sudan made notable progress in submitting a comprehensive report on its activities and submitting a petition for its official creation by September.

Workshops were also organized to empower individuals across various states in Sudan, contributing to local development and addressing pressing energy concerns.

#### **4. Local Student Paper Contest & Workshops**

The office submitted a proposal for a Local Student Paper Contest to encourage academic and research participation among students.

A series of workshops are to be held in different states, aiming to uplift and provide technical guidance to the community.

#### 5. Certificate & Volunteer Management Systems

By mid-year, the office finalized a certificate system for all event attendees, volunteers and speakers as well as to recognize volunteer contributions recommendation and experience system, alongside developing a volunteer evaluation system to provide recommendations and experience certificates. This helps to motivate and recognize the volunteers' efforts despite the ongoing war.

#### 6. Collaboration for WIE Day Celebration

In an exciting development the IEEE WIE Affinity Group ESPRIT Student Branch announced, the IEEE Sudan Section WIE (Women in Engineering) collaboration with the IEEE WIE Sections from Turkey and Spain to organize the *Strength in Unity Virtual Celebration* for WIE Day. This event brought together participants from around the world to empower and celebrate the achievements of women in engineering, demonstrating the strength of unity across different regions.

#### 7. Focus on Membership Development

While the conflict has limited the number of activities, the office maintained its focus on increasing membership, emphasizing the value of IEEE membership and its benefits for personal and professional development.

#### 8. IEEE Xtreme 2024 Preparations

Preparations for the IEEE Xtreme programming competition in October were in full swing, despite the challenges faced due to the crisis, ensuring that Sudanese students could participate. Marking it with a partnership with IEEE Egypt.

#### 9. Young Professionals and SIGHT Initiatives

Plans were developed to submit proposals for the creation of IEEE Young Professionals (YP) and SIGHT (Special Interest Group on Humanitarian Technology) chapters, aiming for submission by the end of the year. These initiatives will further the office's outreach and impact, especially in humanitarian efforts.

Ambassador's participation in all events (PES, IAS, IES, AFI, WEI) and Sudanese volunteers taking global roles in different committees and societies.

## **- Challenges:**

- The high cost of IEEE memberships, combined with Sudan's inability to process payments, remains a major obstacle. We have also faced recurring challenges in our request to elevate Sudan to full section status.

## **Planned Activities**

- **Future Events & Workshops:** We aim to expand virtual events and workshops for students and professionals, with an emphasis on empowering youth and women in engineering. Additionally, we are working towards securing official recognition for new student branches and affinity groups.

### **- Increased Focus on Local Support & Development**

Continuing efforts to provide educational and technological resources to underserved communities, with a focus on children and youth, remains a top priority.

### **- Strengthening Membership & Volunteer Engagement**

With the ongoing challenges, the office plans to enhance its volunteer recognition and membership growth strategies to keep members engaged and motivated despite the limitations.

### **- Collaboration with International Programs**

Efforts to partner with global IEEE initiatives, such as IEEE YESIST12, and secure participation in programs that can have a direct impact on Sudan's rebuilding efforts are underway.

## **How Region 8 Can Help the Section**

### **- Challenges:**

- **High membership fees and the inability to receive payments in Sudan.**

- **Ongoing delays in the petition for elevating Sudan to full section status.**

### **- Limited Activities Due to War**

The conflict has severely limited the range and frequency of activities, resulting in a slower pace of development and engagement.

### **- Volunteer Retention & Engagement**

Due to the challenging circumstances, keeping volunteers motivated and actively engaged has been a hurdle, with many volunteers relocating or becoming unavailable.

### **- Delays in Project Implementation**

While several proposals and initiatives have been launched, the ongoing war has delayed the full implementation of many of these projects, especially those that require on-ground collaboration and resources.

### **- Support Needed from Region 8:**

- Assistance with membership fee reductions or alternative payment options for Sudan-based members.
- Advocacy for elevating Sudan to section status to provide the necessary support for local activities.
- Continued guidance on supporting virtual activities and collaboration efforts.

### **Any Other Issues of Interest**

- We continue to focus on maintaining engagement through virtual means, promoting global collaborations, and ensuring inclusivity, while navigating the challenges of the ongoing war in Sudan.

### **Conclusion**

Despite the significant challenges, IEEE Sudan has managed to achieve key milestones, particularly in leadership restructuring, project initiation, and membership development. Moving forward, the focus will remain on supporting local communities and developing strategic international partnerships while adapting to the evolving situation in the country.



# Institute of Electrical and Electronic Engineers (IEEE) – SUDAN Subsection

جمعية مهندسي الكهرباء والالكترونيات – فرع السودان

## IEEE PES DAY 2024 REPORT

Khartoum, Sudan

P.O BOX 7215

April, 2024

# IEEE

Established in 1963, the Institute of Electrical and Electronics Engineer (IEEE) is the world's largest technical professional organization dedicated to advancing technology for the benefit of humanity. The IEEE traces its founding to 1884 and the American Institute of Electrical Engineers and it currently consists of about 360,000 members. Distinguished IEEE members have included luminaries such as Thomas Alva Edison and Nikola Tesla. IEEE members have been the driving force behind some of the greatest achievements of mankind, like direct and alternate current, microchips, computers, the Internet, and cellphones.

## IEEE SUDAN

Established in May 2011 by the former chair Prof.Sharif F. Babiker and other 12 professionals. Since its foundation, IEEE Sudan has maintained a community of researcher engineers and entrepreneurs, organizing numerous regional and global conferences and activities, thus contributing to the benefit of Sudanese community.

## IEEE PES

The Power & Energy Society(PES) is one of the oldest and largest societies under the IEEE umbrella. PES provides one of the largest and prestigious forums to share the latest developments in the electric power industry and the benefits that they may provide to society in general, as well as discuss how our members can contribute to addressing existing and emerging technology challenges.

The scope of the Society embraces research, development, planning, design, construction, maintenance, installation and operation of equipment, structures, materials and power systems for the safe, sustainable, economic and reliable conversion, generation, transmission, distribution, storage and usage of electric energy, including its measurement and control.



# IEEE PES Day

IEEE PES Day was created in 2018 as a new platform to engage the IEEE Power & Energy Society members with organization's history and vision: **More Power to the Future**. The name was chosen in respect of the day that 'Power Engineering Society' changed its name to the 'Power & Energy Society' on April 22, 2008. Since then, every year, IEEE PES members and volunteers celebrate IEEE PES Day during the entire month of April. Each year, a theme is selected following the guidelines of the 5 pillars of IEEE PES vision:

- Advancing global participation.
- Educating the Future Workforce.
- Industry Activity Trends.
- Standards Leadership.
- Participating in Regulatory Initiative.

This initiative includes educational and humanitarian activities, youth programs, technical contests, lectures, workshops, hackathons, and thematic events. Over 700 ambassadors are selected each year, and they are responsible for organizing these activities in their local chapters and regions and advocating for a sustainable future powered by clean and resilient power and energy technologies.

## The theme of the 7th IEEE PES Day – 2024 is

**Empowering**

**Electric**

**Mobility**

**Innovation.**



**IEEE SUDAN PES DAY 2024**

# IEEE Sudan PES Day

In recognition of the ongoing global pandemic, the IEEE Sudan Section pioneered the inaugural Power & Energy Systems (PES) Day as a virtual event in 2021 during the COVID-19.

Building upon this success, the IEEE Sudan continued their commitment to the power and energy sector by hosting a hybrid online and offline PES Day in 2022. While unforeseen circumstances in Sudan necessitated the cancellation of the event in 2023, the IEEE Sudan Section remains dedicated to serving the community.

This year, 2024, the IEEE Sudan are pleased to announce the continuation of the PES Day tradition in an online format.

## Our Objectives

IEEE Sudan has a fresh vision for the event this year, in order to achieve our goal for PES Day 2024, which consists of the following objectives:

- Increase the awareness about PES society.
- Raise awareness of the significance of energy and electricity and how they affect our lives.
- Host a panel discussion on sustainable transportation policy to address the role of EVs in reducing emissions and involve students and professionals in providing scientific information to influence policy decisions.
- Enable the student to establish the connection between the theoretical and technical knowledge.

# Event Program:

In the following section, we outline 'OUR PLAN' for IEEE PES Day 2024, detailing our comprehensive approach to hosting an enriching and impactful virtual event under this year's theme. which are:

## First day

### **Introduction and Energy Landscape of Sudan**

**Opening Ceremony:** Overview of IEEE, IEEE Sudan, IEEE PES & PES DAY, and highlighting the importance of memberships.

**Panel Discussion:** Exploring the Energy Landscape of Sudan: Current Realities and Future Prospects:

#### **Harnessing Micro-Grids and Encouraging Self-Consumption:**

- Overview and relevance in Sudan.
- Benefits, challenges, and strategies for self-consumption.

#### **Navigating Sudan's Solar Market:**

- Current status and growth trends.
- Industry challenges, opportunities, and policy recommendations.

#### **Pioneering Innovations in the Energy Sector:**

- Innovative technologies transforming the sector.
- Benefits, adoption challenges, and case studies.

## Second day

### Vehicle to Grid Technology and Modern Transportation

#### **Session One:** Electric Vehicles and Smart Grids

- An overview and global status.
- Hybrid EV Powertrian Architecture.
- Methods of EV charging (V1G, V2G) and charger types.
- EV load forecast in Smart Grids.

#### **Session Two:** Sudan Railway Revival Strategy: Enhancing, Updating, and Ensuring Emergency Preparedness

#### **Panel Discussion:**Current Trends and Future Prospects in Electric Vehicles

#### **Part One:** Feasibility Study for Electrical Trolleybus System in Khartoum, Sudan

- An overview of the Electrical Trolleybus system.
- Importance of the Trolleybus system in the development of communities.
- Highlighting the Environmental, Economic and Social benefits of Trolleybus systems.

#### **Part Two:** EVs Challenges

- General Classification of EVs.
- EVs adoption challenges.
- Motor Drive, Energy Source and Battery Changing technologies.

## Third day

### Revolutionizing Energy Storage and Power Systems

#### **Session One:** Revolution of Battery Energy Storage Systems (BESS):

- Introduction and global significance.
- Development of new battery types and BESS applications.
- Challenges and opportunities in Sudan and beyond.

#### **Session Two:** Big Data Analytics in Power System

- Understanding big data in power systems.
- Global need and advancements in big data analytics.
- Cutting-edge techniques and their applications in Sudan.

# Summary Report

We are pleased to present a comprehensive report of IEEE PES Day 2024. This year, our program consisted of four sessions and two panel discussions, each tailored to explore critical aspects of the power and energy sector. Below is a detailed breakdown of each event, including the topic, speaker information, event screenshots, attendance data, and links to live sessions.

## Event Breakdown:

### Day One Opening Ceremony

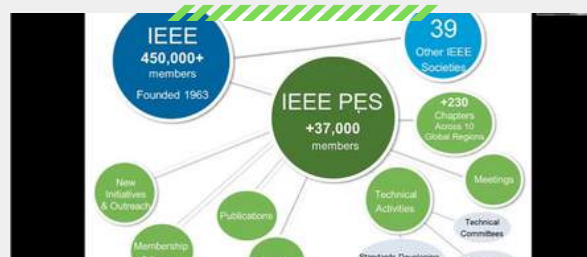
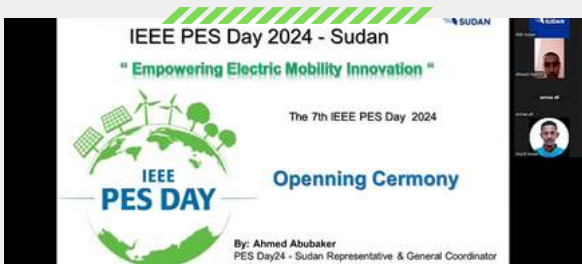
**Eng. Ahmed Abubaker**

- IEEE Membership Development Committee - Sudan Representative.
- IEEE Member | IEEE YP Member | IEEE PES Member | IEEE PELS Member.
- HR Office Member of IEEE Sudan.
- General Secretary of IEEE AAU SB.
- IEEE PES Day 2024 – Sudan Representative.
- IEEE PES Day 2023 & 2024 Ambassador.
- IEEE PES HAC23 Ambassador.
- IEEE PES PFS23 Ambassador.
- IEEE ASYPC23 Ambassador.

 [ahmed.abubaker@ieee.org](mailto:ahmed.abubaker@ieee.org)



### Screenshots and Media



Screenshots and Media

**Live Session Link: [Click Here](#)**

**Time:** 22 April | 2024

UTC +2 | 09.00 PM

## Panel Discussion: Exploring the Energy Landscape of Sudan: Current Realities and Future Prospects

Topic: Harnessing Micro-Grids and Encouraging Self-Consumption

### Dr. Samah Hashim

- Assistant professor in Electronics Engineering - Department of Electrical and Electronics Engineering.
- PhD. in solar energy efficiency.
- Head of Engineering force-Nubland Energy Framework.
- National consultant of UNDP in mini-grid project document (GEF7).
- Researcher & publisher in renewable energy systems, smart grids, and promotion of sustainability through artificial intelligence.

✉ samah\_hashim@hotmail.com



**SPEAKER**

Topic: Navigating Sudan's Solar Market

### Eng. Nedal Ebnouf

- Energy Specialist working in the domain of energy science and sustainability in renewable energy and climate change challenges.
- Lecturer, researcher, and a STEM advocate.
- MSc. Energy Science/Policy Track - the Pan African University, Institute of Water and Energy Sciences, PAUWES- Algeria .
- MSc. Mathematical Sciences - the African Institute for Mathematical Sciences, Cameroon.
- BSc. Physics Science - Sudan University of Science and Technology.
- Has organized workshops during the past two years on sustainability and economic, in behalf of the chair committee of Young African Leadership Program- YALI, the chapter of Sudan.

✉ nedal.sayed.ebnouf@gmail.com



**SPEAKER**

Topic: Pioneering Innovations in the Energy Sector

### Eng. Doha Kamal

- PhD. student, in Electrical Engineering - UTCN (Technical University of Cluj-Napoca), Romania.
- M.Sc. in Management of Modern Power Systems - UTCN (Technical University of Cluj-Napoca), Romania.
- B.Sc. in Electrical Power - Al-Zaiem Al-Azhary University, Sudan.
- Research trainee - Darmstadt University of Applied Sciences, Germany.
- Researcher in the topic Flexible and Adaptable AI & Digital Solutions for Renewable-Based Electrical Energy Sources, Storage Systems, and Loads in Smart Energy Systems

✉ eng.doha.kamal@gmail.com



**SPEAKER**

**Eng. Bahaaldeen Mohammed**

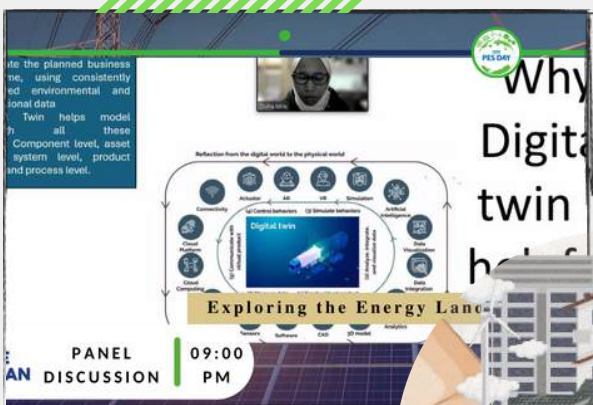
- Lecturer at National University, Sudan.
- PhD. student in Electrical Engineering, Indian Institute Of Technology Roorkee, India.
- M. Tech in Power System Engineering, Indian Institute Of Technology Roorkee, India.
- MSc in Transportation Engineering, Central South University, China.
- B.Eng in Electrical Power, Alzaiem Alazhari University, Sudan.
- IEEE PES Member.
- IEEE PES-HAC Ambassador.
- IEEE UP Section Ambassador.



**Moderator**

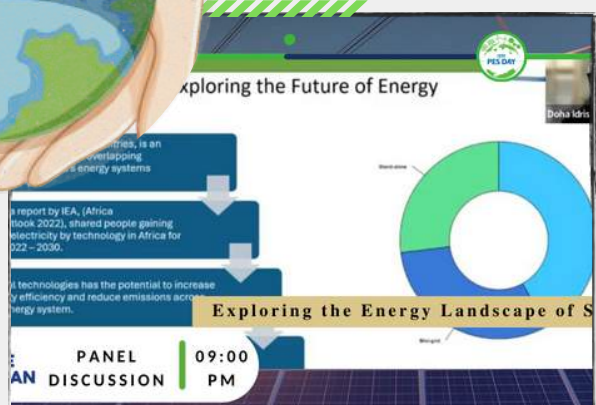
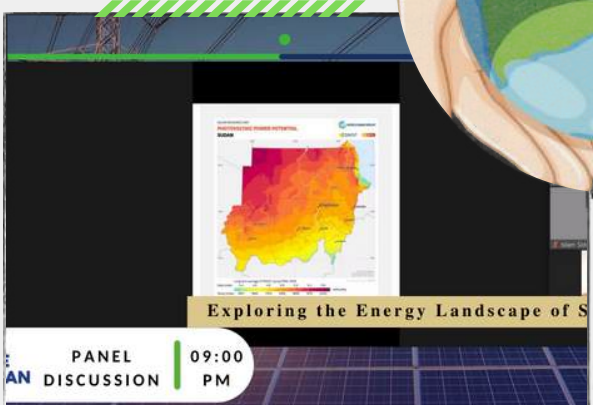
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**Screenshots and Media**



	Tier 0	Tier 1	Tier 2	Tier 3	Tier 4	Tier 5
Capacity	No electricity	1-50W	50-500W	500-2000W	>2000W	
Duration	<4hrs	4-8hrs	8-16hrs	16-22hrs	>22hrs	
Reliability	Unscheduled outages			No unscheduled outages		
Quality	Low quality			Good quality		
Affordability	Not affordable			Affordable		

Screenshots and Media



Screenshots and Media

**Live Session Link: [Click Here](#)**

**Time:** 22 April | 2024

UTC +2 | 09.00 PM

Day2

Session One: Electric Vehicles and Smart Grids

Dr. Mustafa Alrayah

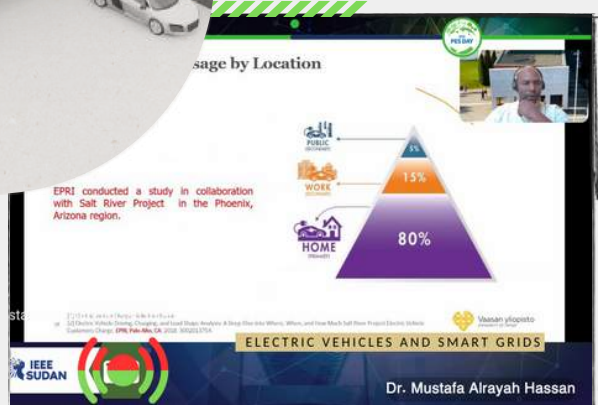
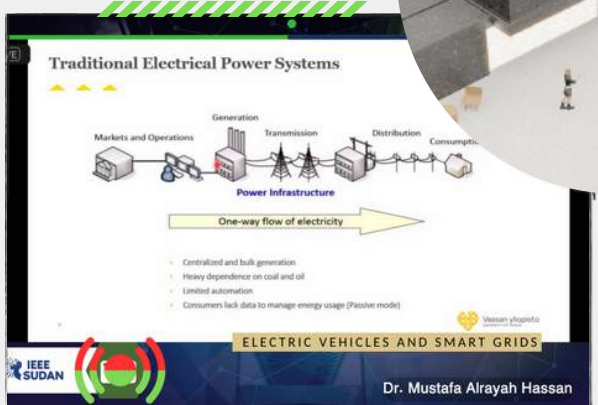
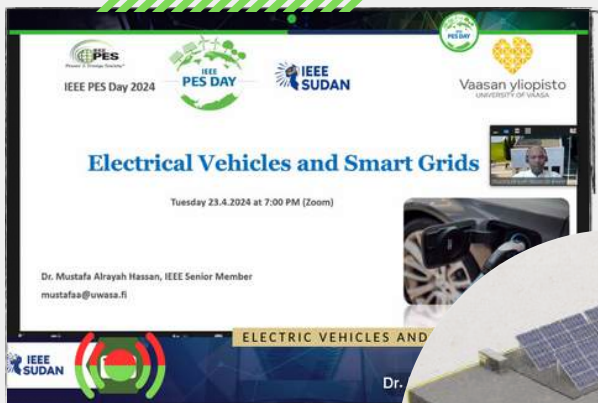
- Postdoctoral Researcher and Assistant Professor - University of Vaasa, Finland
- Ph.D. degree in Electrical Engineering, Hebei University of Technology, China
- M.Sc. degree in Electrical Power Engineering, University of Khartoum, Sudan
- B.Sc. degree in Electrical Engineering, University of Blue Nile, Sudan
- A Senior Member, IEEE
- Researcher and publisher in power electronic converters, distributed generation systems, renewable energy integration, smart grids, and electrical vehicles

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SPEAKER

Screenshots and Media



Screenshots and Media

Screenshots and Media

Live Session Link: [Click Here](#)

Time: 23 April | 2024

UTC +2 | 07.00 PM



## Session Two: Sudan Railway Revival strategies

### Mr. Abdelwhab Mustafa

- Deputy General Manager for Operation, Sudan Railway.
- Director of the Middle Region for Traffic, Transport and Marketing, Sudan Railway Authority.
- Former Director of Employment, Middle Region, Khartoum, Sudan Railway Authority.
- M.Sc in Business Administration (Marketing), Sudan International University.
- Mini Professional Master in Business Administration, British Council For Training & Consulting.
- B.Sc in Financial Accounting, Omdurman Islamic University.



**SPEAKER**

[abooodi29105@gmail.com](mailto:abooodi29105@gmail.com)

### Screenshots and Media

Screenshots and Media

Screenshots and Media

**Live Session Link: [Click Here](#)**

**Time:** 23 April | 2024

UTC +2 | 08.30 PM

## Panel Discussion: Current Trends and Future Prospects in Electric Vehicles

### Part One: Feasibility Study for Electrical Trolleybus System

#### Dr. Abdallah Abdaelbaset

- Overhead Lines Policy Engineer – Asset Management- Glasgow- UK.
- Executive Committee Member Power Networks Planning Lead – Sudanese Industrial Development ORG.
- Expert Panel Member – PEL / 036 Insulators For Power Systems British Standards Institution (BSI- LONDON).
- Former Outage Planning Engineer – Transmission Control Centre Perth – UK
- Former Operational Planning Engineer – Transmission Major Projects Department – Glasgow – UK.
- Ph.D. In Power Systems- Glasgow Caledonian University – UK.
- B.Sc OF Engineering Cardiff University- Cardiff – UK.



**SPEAKER**

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#### Eng. Bahaaldeen Mohammed

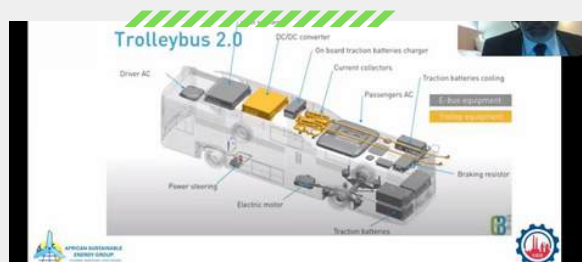
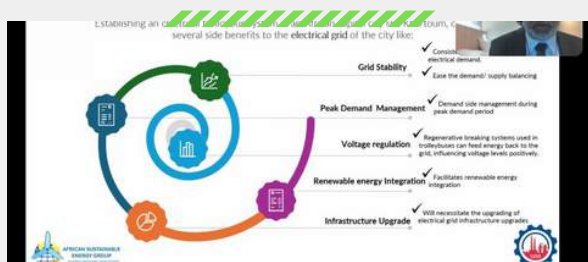
- Lecturer at National University, Sudan.
- PhD. student in Electrical Engineering, Indian Institute Of Technology Roorkee, India.
- M. Tech in Power System Engineering, Indian Institute Of Technology Roorkee, India.
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- B.Eng in Electrical Power, Alzaiem Alazhari University, Sudan.
- IEEE PES Member.
- IEEE PES-HAC Ambassador.
- IEEE UP Section Ambassador.



**Moderator**

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#### Screenshots and Media



Screenshots and Media

[Live Session Link: Click Here](#)

**Time:** 23 April | 2024

UTC +2 | 09.30 PM

Day3

Session One: Revolution of Battery Energy Storage Systems

Eng. Mohamed Ibrahim

- Project Manager of 600 KWp solar PV project Ministry of Energy and Mining TEKNO Consultancy.
- Project Manager of Nile Club International & Head of MEP department TEKNO Consultancy.
- Project Manager of Hergigo Power plant DCS project Asmara, Eritria.
- Senior Instrumentation Technian Greater Nile Petroleum Operating Company (GNPOC).
- B.Sc in Electronic Engineering Sudan University of Science & Technology, Sudan.
- Diploma of Electronic Engineering - Sudan University of Science & Technology, Sudan.



SPEAKER

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Screenshots and Media

**Opportunity Of Deployment Of BESS In Sudan**

- Sudan is rich of Renewable energy sources
- Rural electrification and off-grid solar solution, only 35% of Sudan population has access to electricity
- Residential, commercial, industrial, mining, telecom and agricultural sectors all of these are high potential for BESS implementation
- Emerge of Decentralised microgrids and utility scale solar project
- Decline cost of BESS

**Overview Of Sudan's Electricity Consumption By Sectors**

Domestic	87.0%
Industrial	14.0%
Commercial	13.0%
Governmental	10.0%
Agricultural	9.0%

**BESS Architecture**

```

    graph TD
        subgraph Control_subsystem [Control subsystem]
            Communication_subsystem[Communication subsystem]
            Protection_subsystem[Protection subsystem]
            Management_subsystem[Management subsystem]
        end
        subgraph Primary_subsystem [Primary subsystem]
            Accumulation_subsystem[Accumulation subsystem]
            Power_conversion_subsystem[Power conversion subsystem]
        end
        subgraph Auxiliary_subsystem [Auxiliary subsystem]
            Connection_terminal[Connection terminal]
        end
        Communication_subsystem --- Management_subsystem
        Management_subsystem --- Accumulation_subsystem
        Management_subsystem --- Power_conversion_subsystem
        Accumulation_subsystem --- Power_conversion_subsystem
        Power_conversion_subsystem --- Connection_terminal
    
```

**Global Market Value Of Battery Energy Storage System**

Year	Value (Million USD)
2022	2,873
2023	3,793
2024	5,053
2025	6,530
2026	8,303
2027	11,088
2028	15,338
2029	20,688
2030	27,588
2031	36,830
2032	48,343

[Live Session Link: Click Here](#)

Time: 24 April | 2024


UTC +2 | 07.00 PM

## Panel Discussion: Current Trends and Future Prospects in Electric Vehicles

### Part Two: Electric Vehicle Technologies

#### Eng. Mosab Mohammed

- Electrical Valve and Digital Optical Instrument Transducer Designer - Hitachi Energy, Sweden.
- Former Head of Maintenance Management at the El Fasher Power Plant.
- Former Renewable and Electric Power Systems Engineer - Sudanese Thermal Generating Company.
- M.Sc degree in Electrical Engineering - University of Uppsala in Renewable Electricity Production, Sweden.
- M.Sc degree in Electrical power - Sudan University of Science and Technology.
- B.Sc degree in Electrical Engineering - Sudan University of Science and Technology.

 mosabb1991@gmail.com



**SPEAKER**

#### Eng. Bahaaldeen Mohamme

- Lecturer at National University, Sudan.
- PhD. student in Electrical Engineering, Indian Institute Of Technology Roorkee, India.
- M. Tech in Power System Engineering, Indian Institute Of Technology Roorkee, India.
- MSc in Transportation Engineering, Central South University, China.
- B.Eng in Electrical Power, Alzaiem Alazhari University, Sudan.
- IEEE PES Member.
- IEEE PES-HAC Ambassador.
- IEEE UP Section Ambassador.

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**Moderator**

#### Screenshots and Media



Screenshots and Media

[Live Session Link: Click Here](#)

**Time:** 23 April | 2024

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## Session Two: Big Data Analytics in Power System

### Eng. Mohammed Mukhtar

- Director of Control Systems and Programs Department National Load Dispatch Center – Sudanese Electricity Transmission Co. (SETCO).
- M.Sc in Electrical Energy Systems School of Engineering of Cardiff University, UK.
- B.Sc in Electrical and Electronic Engineering, Honors University of Khartoum.
- Researcher and publisher in ICT, Infrastructure for smart distribution networks, IEEE International Symposium on Power Line Communications and Its Applications (ISPLC).
- Famous Publications: He Y, Jenkins N, Wu J, Eltayeb M.



**SPEAKER**

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### Screenshots and Media

The screenshots illustrate various aspects of Big Data Analytics in Power Systems, including data gain strategies, Demand Side Management (DSM) customer segmentation, Hadoop MapReduce data processing, and load variation analysis.

Screenshots and Media

Screenshots and Media

[Live Session Link: Click Here](#)

**Time:** 24 April | 2024

UTC +2 | 09.00 PM

## Organizing Team and Ambassadors

We extend our deepest gratitude to our dedicated organizing committees and ambassadors, whose tireless efforts made IEEE PES Day 2024 a resounding success. Here are the teams and individuals who played key roles:

### Leadership Team

1. Ahmed Abubaker Mohammed | [General Coordinator](mailto:ahmed.abubaker@ieee.org) | ahmed.abubaker@ieee.org
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## Conclusion

IEEE PES Day 2024, held entirely online due to unforeseen circumstances in Sudan, concluded with resounding success, bringing together a diverse range of engineers, academics, and industry professionals to explore the theme of Empowering Electric Mobility Innovation.

Despite the challenges posed by the virtual format, the event's organizers, ambassadors, and volunteers demonstrated remarkable resilience and adaptability, ensuring a seamless and engaging experience for all participants. The event featured a rich program of panel discussions, workshops, and presentations, covering a wide spectrum of topics related to sustainable transportation and the advancement of power and energy technologies.

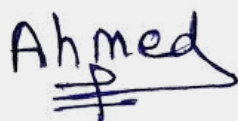
The insightful contributions of the esteemed speakers, drawn from both technical and administrative backgrounds, sparked lively discussions and fostered a collaborative environment where ideas were exchanged and partnerships were forged. Participants gained valuable insights into the latest trends and challenges in the field while also expanding their professional networks and building connections with like-minded individuals.

This year's IEEE PES Day 2024 served as a testament to the power of innovation and collaboration, even in the face of unforeseen circumstances. The event's success is a direct result of the dedication and hard work of all those involved, and it will undoubtedly leave a lasting impact on the advancement of power and energy technologies in Sudan and beyond.

On behalf of the IEEE PES Day 2024 Organizing Committee,

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