



**Hydrogen Research Institute,
Afe Babalola University, Ado-Ekiti, Ekiti State, Nigeria**

CONFERENCE REPORT: INTERNATIONAL CONFERENCE ON CLEAN ENERGY IN AFRICA (ICCEA) 2024.

INTRODUCTION:

The Hydrogen Research Institute organized an International Conference on Clean Energy in Africa (ICCEA). It was held at Afe Babalola University, Ado-Ekiti (ABUAD), Nigeria, with arrival from Sunday, September 25th to Tuesday, September 27th, 2024. **The Conference aimed to address the pressing energy challenges with respect to energy efficiency, clean energy, and Green hydrogen in Ado-Ekiti Local Community, Ekiti State, Nigeria, and Africa, explore sustainable technological solutions in the field of clean energy, and provide a robust energy efficiency and clean energy policy framework for Ado - Ekiti, Ekiti State, Nigeria, and Sub-Saharan Africa.**

The event focused on three (3) subthemes: Hydrogen Energy, Green Hydrogen, and General Clean energy transition and policy. The Conference brought together top government functionaries at Local,

State, and Federal, experts, researchers, clean energy policymakers, and stakeholders from across Nigeria, Africa, and around the world.



The Conference kick-started with a welcome Address by Dr. Boluwaji Jaiyesimi (LOC Chairman). After which, the Vice Chancellor of Afe Babalola University, Ado-Ekiti; in person of Prof. Elisabeta Smaranda Olarinde, FCARB, FCAI made the opening remarks. However, the remarks were made by the President of the Institute of Electrical and Electronics Engineers (IEEE) in person of Engr. Funsho, Mr Adebayo Adeniyi, Commissioner for Works and Power, and Eng Abiodun Abegunde, General Manager, Ekiti State Electricity Board.

Attendee Information:

The ICCEA attracted a diverse array of attendees, including representatives from the government, IEEE, Research Institutions, Energy Companies, Local Communities, and Academia. In total, 248 Participants attended the Conferences on-site with 58 virtual

Participants. This diverse gathering fostered cross-border collaborations and knowledge sharing on clean energy.



Keynote Speakers and Presentations:

The Conference featured renowned keynote speakers who delivered insightful presentations on clean energy in Africa. On the first day of the Conference dated Monday, 26th September 2024, Prof. Oluseyi Ajayi who is a Professor of Mechanical Engineering at the Department of Mechanical Engineering, Covenant University, Ota, Ogun State, Nigeria. His research interests span across two major

fields of Mechanical Engineering which are Energy Systems, Design, and Production Technology. **He highlighted the Green Hydrogen in Energy Transition: Lesson for Sub-Sahara Africa and emphasized the need for supportive policies, investment, and collaborations to accelerate the deployment of Clean Energy in African.**

On the Second day, dated Tuesday, 27th September 2024, another notable presentation was given by Prof. Ayodele Ajayi, a Professor of Agricultural Engineering, Department of Agricultural and Environmental Engineering, the Federal University of Technology Akure, Nigeria, and Institute of Fourth Industrial Revolution, ABUAD.

Prof Ayodele Ajayi stated the Pathways for Green Hydrogen in Nigeria. He said that ABUAD is the first Institution in Nigeria to have a hydrogen research center and one of the three in the whole of West Africa. He emphasized the Hydrogen Research Institute, Bogoro Center, and ABUAD should leave no stone on the turn to attain a scholar level in this field to attract research and grant opportunities.

Another notable presentation was given by Prof. Bamidele Adebisi, Professor of Intelligent Infrastructure Systems, at Manchester Metropolitan University. **He highlighted the keys to Industrialization and Decarbonization, Prospects, Challenges, and a Call to Action. He said the cost of some of the elemental materials used in the production of hydrogen is huge, which is one of the major factors to be considered in the production of hydrogen energy, especially green hydrogen energy.**



Finally, the last notable presentation was given by Dr. Agbo Solomon where he stated the Potential, Opportunities, and Challenges of a Green Hydrogen Economy in Africa. He mentioned that the different colours of hydrogen range from gray, blue, brown, purple, white, yellow, gold, and green. **Green hydrogen is the most recognized which is the research focus of the Hydrogen Research Institute in ABUAD.**

They discussed the opportunities and challenges of Green Hydrogen Production and utilization in Africa. However, they emphasized the role of Green Hydrogen in carbonizing various sectors.

Interactive Session:

This Session was coordinated by Dr (Mrs) Sophia Abiri-Franklin, Department of Law, Babcock University, Ilishan Remo, Ogun, Nigeria. And Dr. Yinka Ajiboye, Associate Professor of Physics, Department of

Mathematical and Physical Sciences, ABUAD, Nigeria. This session included discussions where questions were asked and answers provided. Some of the questions asked were: (i) Will production of green hydrogen be feasible in Nigeria due to government policy and bureaucracy knowing fully that the government is so dependent on fossil fuel as a major source of energy? (ii) Is there existing infrastructure that can be converted into a hydrogen production plant? Appropriate answers were given that delved into the subthemes of Clean Energy and Green Hydrogen.

The Interactive session centered on exploration, current status, and prospects of green energy technologies in Africa. Discussions were also made on policy frameworks, financing mechanisms, and successful case studies of green energy projects across Africa. The discussions also highlighted the need for increased investments, regulatory support, and capacity building to accelerate the green energy transition in Africa.



Break Out Sessions

The Breakout Sessions were held in three different venues within the Institutions namely;

- a. Conference Room (E.S. Bogoro Centre)
- b. College of Engineering Board Room
- c. College of Sciences Board Room

However, on-site and virtual presentations were made in these three venues mentioned.



Total Number of Participants at the Conference both On-site and online for the two days.

DAY	NO PARTICIPANTS		VENUE		
	On-site	Online	Bogoro Conference Room	College of Sciences Board Room	College of Engineering Board Room

Day 1 and Day 2	248	58	121	64	63
Total No Participants	248	58	121	64	63



The Strengths of the Conference

1. The ABUAD Hydrogen Research Institute is a pioneering entity in hydrogen research within Nigeria, providing a strong foundation for the ICCEA conference.
2. The event provided a robust policy development framework for energy efficiency, transition, and clean energy technology

between ABUAD and government at all levels (Local, State and Federal)

3. Collaborative efforts with the IEEE Nigeria Section were initiated, which was a significant development for all parties involved in policy formulation and implementation.
4. The conference boasted of significant number of papers, averaging around 100 submitted papers on clean energy and sustainability areas indicating robust academic participation and output.
5. A diversified and multidisciplinary approach enriched the quality of discussions and findings presented that accelerate the energy transition to meeting the United Nations Sustainable Development Goals before 2030 in Ekiti State.
6. The event served as an excellent platform for scholarly interactions and fostering collaboration on Clean Energy within the scientific community.
7. There were ample opportunities for scholarly publications, thereby contributing to the academic field. By deepening the energy transition knowledge base.
8. The conference successfully increased awareness of the Hydrogen Research Institute in relation to the provision of clean energy and low carbon emissions.
9. The standard of the presentation rooms was at par with international conferences, thereby enhancing the experience for participants.

10. Global participation lent the conference an international outlook, promoting diversity in clean energy research and perspectives.

