



WASEND NEWSLETTER

Vol. 1

Issue 3

2023



Welcome Message

I am excited to welcome you to the third edition of the West Africa Sustainable Engineering Network for Development (WASEND) Newsletter. This edition captures WASEND activities through seminars, capacity-building workshops, academic exchange programmes and symposia.

WASEND is made up of four World Bank-designated African Centres of Excellence (ACEs) in Engineering, namely:

- The College of Engineering, Kwame Nkrumah University of Science and Technology (KNUST), Ghana

- The International Institute of Water and Environmental Engineering (2iE), Burkina Faso
- The University of Science, Engineering, and Technology (USET), Gambia (an Emerging ACE), and
- The College of Engineering, Université D'Abomey – Calavi (EIE), Benin

WASEND is a World Bank-designated African Center of Excellence (ACE) network in engineering education and research. The network seeks to leverage the expertise of its members and build synergies

to address sub-regional challenges in energy and digital development.

The focal areas of the network are energy and digital development.

The network comprises symposia, seminars, capacity-building workshops, impact projects, and academic exchange programmes.

I am pleased to announce that the Université D'Abomey, Calavi in Benin, has been unanimously chosen to host the network for the next two years. I ask that you give the new leadership the same support you gave me.

We welcome contributions and suggestions from stakeholders and readers to help improve the Newsletter. Please send suggestions to WASEND@knust.edu.gh.

Welcome once again!

Prof. Jerry John Kponyo

Network Coordinator ■

Faculty members from Université D'abomey–Calavi, Benin pay a working visit to KNUST



Group photograph of the team from Benin paying a courtesy call on the Provost, College of Engineering, KNUST

Seven faculty members from the College of Engineering, Université D'Abomey, Calavi, Benin (CoE, EIE) paid a one-week working visit to the College of Engineering, KNUST, from August 27 to September 2 2022, to study the best academic and administrative practices of KNUST.

As their first activity, the Benin team paid a courtesy call to the Provost of the College of Engineering, Prof. Mark Adom Asamoah. The team comprised the Director of Ecole Polytechnique D'Abomey – Calavi / CoE-EIE Coordinator, Prof. Alitonou Guy Alain, the CoE-EIE Deputy Coordinator, Prof. Fifatin François-Xavier, the Training Manager, Dr. Houanou K. Agapi, the Corporate Relations Officer, Prof. Oumorou Aliou A.

Madjidou, the Research Officer, Prof. Tchobo Fidèle Paul, the Monitoring and Evaluation Manager, Dr. Chetangny Patrice Koffi and the Bilingual Administrative Assistant, Mrs. Kpoglo Clotilde.

The Provost of the College of Engineering, KNUST, Prof. Adom Asamoah, welcomed the team to Ghana and KNUST. As part of his welcome address, he informed the team that KNUST has been ranked as the premier university in Africa and the 14th globally by the Times Higher Education World University Impact Ranking in the delivery of quality education.

Both parties gave a brief history of their Universities and Colleges of Engineering and the activities both teams partake in. Both Colleges of

Engineering agreed to collaborate in research areas through the West Africa Sustainable Engineering Network for Development (WASEND) and to revive the Memorandum of Understanding (MoU) signed between both universities some years back.

To ascertain and adequately understand how KNUST functions and the role it plays in teaching and learning activities, the Benin team toured the KNUST main library, the Quality Assurance and Planning Office (QAPO), the Photocopy Unit, the International Programmes Office (IPO) and the College of Engineering Innovation Center.



Group photograph with Mrs. Gladys A. Addai, Senior Assistant Registrar, International Programmes Office, KNUST (middle)

They also toured the laboratories in the College of Engineering, KNUST and met with the Head of the Department of Electrical and Electronics Engineering, Prof. Emmanuel Frimpong, for more insight into the structure of academic programmes in his department.



Mandela Toku (in the mask), the Lab Manager at RWESCK, explained a point to the delegation.

The Benin team met with the Management of the KNUST Engineering Education Project (KEEP), led by Prof. Kwabena Biritwum Nyarko. Both African Centers of Excellence (ACE) Impact Projects presented their project phases and what has been achieved so far. Both teams agreed to collaborate more, especially in research supervision and publications.

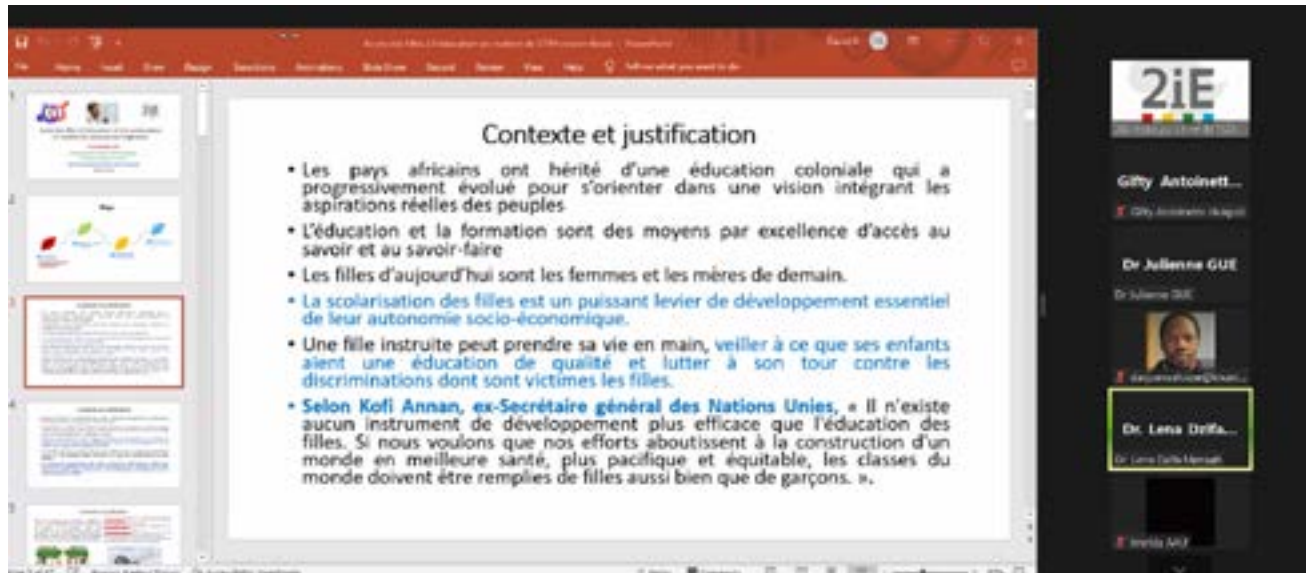
The Benin team toured the facilities and laboratories of the Transport Research and Education Centre, Kumasi (TRECK) and the Regional Water and Environmental Sanitation Centre, Kumasi (RWESCK). They also visited the College of Engineering Postgraduate Building (KEEP building).



Mr. Kwadwo Nyantakyi Marfo, the Project Manager of KEEP, explained a point to the delegation at the Digital Development Technologies Thematic Lab in the KEEP building.

The team from Benin expressed their gratitude to the Provost of the College of Engineering and his team for the warm reception and great hospitality during their visit. They emphasised the need to renew the MoU between the universities for further research and collaborative activities. The Provost informed the Benin team that an institutional students' visit could be organised to make the CoE laboratories accessible for their students. He emphasised that the MoU will go through the legal processes and then be signed by the Vice Chancellor of KNUST, Prof. Mrs. Rita Akosua Dickson. He thanked the team for visiting KNUST and the College of Engineering. He wished them safe travel back to Benin and hoped for a deeper relationship between both universities. ■

Advocating for female equality and inclusion in engineering education



Screenshot of the presentation slide

WASEND organised its second capacity-building workshop on the theme, “Gender Mainstreaming in Engineering Education: Approaches and Experiences “. The workshop was hosted by the College of Engineering, KNUST, on November 29 2022, via Zoom with Dr Julienne Nesseindoa GUE, CEO of the National Agency for Women, Peace, and Security, Burkina Faso, as the Resource Person.

Dr. Lena Dzifa Mensah, a Senior Lecturer at the Mechanical Engineering Department, KNUST, moderated the workshop. Presentations and discussions were centred on gender mainstreaming and how females can be mainstreamed in engineering education, considering the issues of gender inequality and gaps in engineering.

In his welcome address, Dr. David Ato Quansah, the Deputy WASEND Coordinator, welcomed participants to the workshop on behalf of the Executive Board of WASEND. “The purpose of these capacity-building workshops is to empower our network members with the requisite knowledge and tools to advance the quality and relevance of engineering education or research for greater developmental impact,” he stated.

Dr. Julienne Nesseindoa Gue is the Director General of Women, Peace, and Security at the

Ministry of Gender in Burkina Faso. She is the Secretary-General of the Association of Women Scientists in Burkina Faso (AFSCI-B) and collaborates with several umbrella organisations and women’s Civil Society Organizations (CSOs).

She is a former Technical Advisor to the former Minister of Scientific Research and Innovation in charge of issues related to gender, inclusion, and Innovation in Burkina Faso.

Dr. Gue presented on girls’ access to education and engineering schooling. She said today’s girls are the women and mothers of tomorrow, and girls’ education is a powerful lever for developing their socio-economic autonomy. She mentioned that an educated girl could take charge of her life, ensure her children access quality education, and fight against discrimination against girls.

She spoke about “equality and equity” and said it calls for social justice for men and women according to their conditions and situations.

She gave the underlisted points as the barriers or underlying causes of the low integration rate of girls in STEM education.

1. Economic and Poverty Reasons: STEM establishments are costly, and some families prefer to keep their female wards at home for house

chores than pay enormous amounts for them to enrol in STEM education.

2. Early marriages
3. Parents' preference for boys' education: Parents prefer to invest in boys' education because the girl is considered a 'stranger' who will have to go and live with another family and take care of household chores.

She recommended the following mitigation measures:

1. Developing positive discrimination policies in favour of girls to boost their schooling and maintenance at all education levels;
2. Principles of equity and equality between girls and boys should be promoted;
3. Sensitising parents on the importance of girls' education

and the adverse effects of early marriage;

4. Raising awareness and supporting girls and adolescents to arouse their motivation for studies;
5. Awarding scholarships to girls who excel but come from vulnerable families.

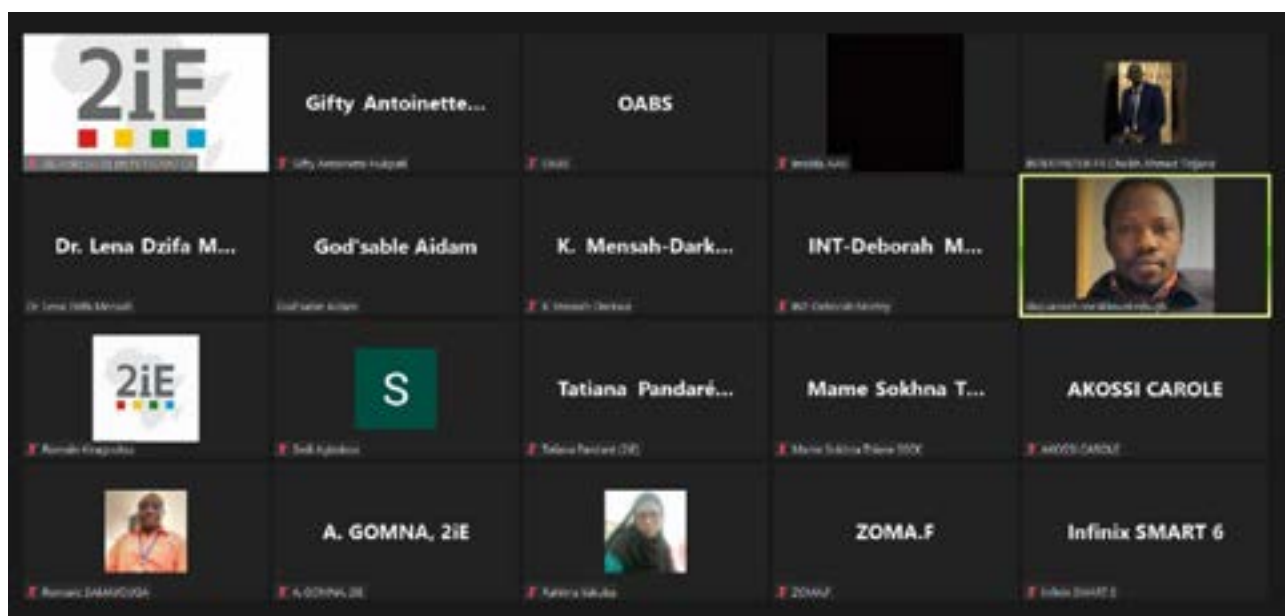
“Our country is gradually moving towards gender parity and solving the problems girls face in the education system. This is where civil society must put pressure on the government to respond, provide opportunities and solutions, and ensure that girls' education is improved,” she concluded.

The questions and answers session of the workshop brought up critical issues on breaking cultural and religious stereotypes, getting men involved in gender discussions,

and whether to adopt a merit-based or gender-based approach to closing the gender gap.

In his closing remarks, Dr. David Ato Quansah thanked the resource person for her enlightening presentation. He also thanked the African Association of Universities (AAU) and the translation team for their excellent service. He also appreciated the participants and the WASEND team for making the workshop successful.

Click on the link https://docs.google.com/presentation/d/1K_YyfokuXQIo-pUbLNUAe7-6A9vmOoJZN/edit?usp=share_link&oid=100843132195621956409&rt-pof=true&sd=true to access the presentation. ■



A screenshot of participants at the workshop

Resource mobilisation for engineering education and research in africa



A screenshot of the presentation slide

WASEND held its third capacity-building workshop on the theme “Mobilising Resources for Engineering Education and Research in Africa – What are the critical success factors?”. The workshop was hosted by the College of Engineering, Université D’Abomey – Calavi, Benin, on December 6 2022, via Zoom, with Prof. Kwabena Biritwum Nyarko, Provost, College of Engineering, KNUST as the resource person.

The presentation and discussions were centred on funding sources for research, the importance of networks and partnerships, and how to win research grants.

The Network Coordinator, Prof. Jerry John Kponyo, welcomed participants to the 3rd in the series of WASEND capacity-building workshops. “We are honoured to have the Provost of the College of Engineering speak to us on mobilising resources for engineering education and research out of his rich experience in managing numerous projects and grants,” he stated.

Prof. Kwabena Biritwum Nyarko is the Provost of the College of Engineering and the immediate past Vice Dean of the Faculty of Civil and Geo-Engineering. He is also the Project Lead

for the KNUST Engineering Education Project (KEEP), a World Bank-funded Africa Center of Excellence (ACE) project through the Government of Ghana, and the Principal Investigator for the Rural Evidence and Learning for Water (REAL-Water) programme. He is also the Chairman of the WASEND Executive Board.



A screenshot of the resource person’s presentation and a section of the participants.

Prof. Nyarko listed some internal and external resource mobilisation sources as Multilateral and Bilateral organisations, government budgets, NGOs, Corporate organisations, internally generated Funds, individual Philanthropists, and the private sector.

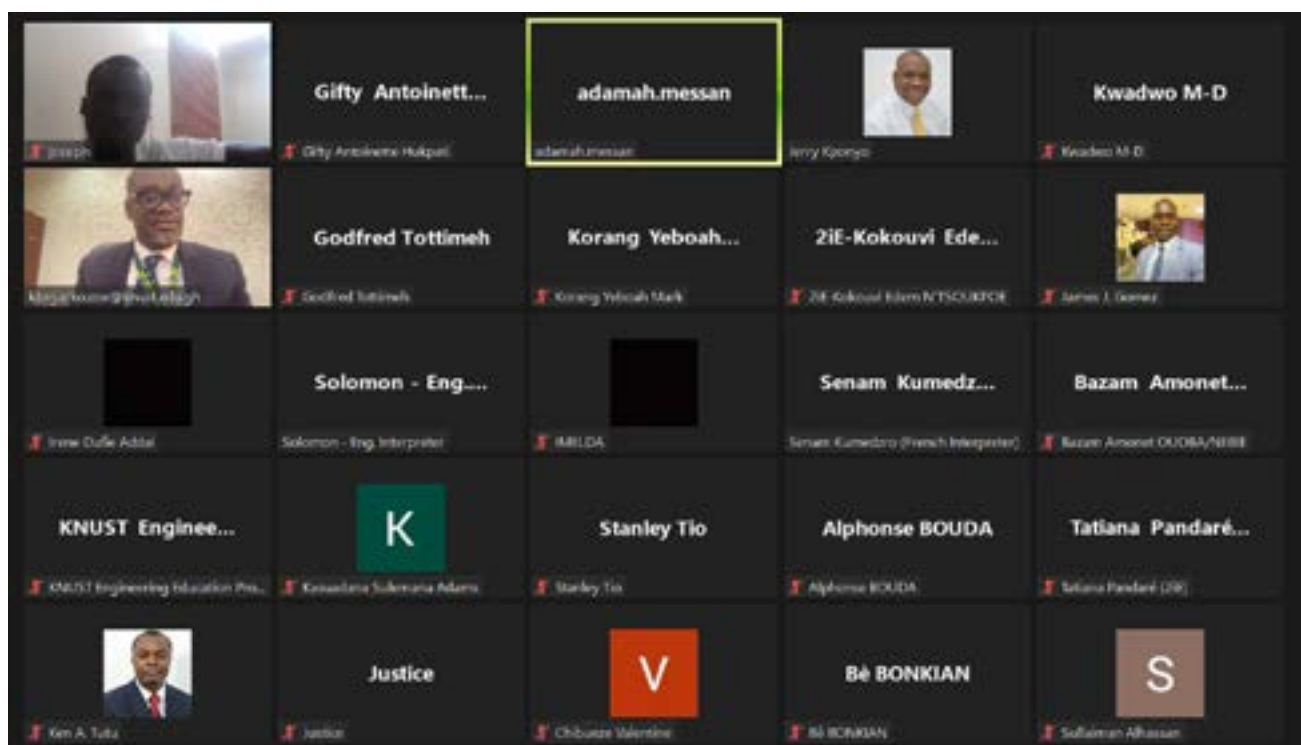
He enlightened participants on the strategies and plans for research mobilisations. He hinted that one should thoroughly research the funding body or agency and ensure that grant proposals align with the interest of the funding agency in addressing real problems. He indicated that the problem should be well defined with the organisational and stakeholder Strength, Weakness, Opportunities, and Threats (SWOT) analysis performed. He added

that a resource mobilisation and sustainability strategy should also be developed.

In discussing the critical success factors, Prof. Nyarko indicated that networks and partnerships are crucial regarding resource mobilisation. He mentioned WASEND and the Africa Centers of Excellence (ACEs) collaborations as successful networks and partnerships. He stated that having a Memorandum of Understanding (MoU) with Academic

and Research institutions is a step in the right direction. "Having a strong academia and industry relationship and leveraging alumni contribution and support is a critical resource mobilisation success factor," he intimated.

He concluded that addressing developmental challenges and problems affecting many people and communities gives a greater chance for grants and funding opportunities.



A screenshot of participants at the workshop.

Participants enquired about grant management and the speaker's experience in acquiring grants, best practices in staff motivation processes, and bottlenecks in procurement processes, among other interactive discussions.

In response to the issues raised, the speaker indicated that grant management is critical and understanding the rules of the funding agency is crucial.

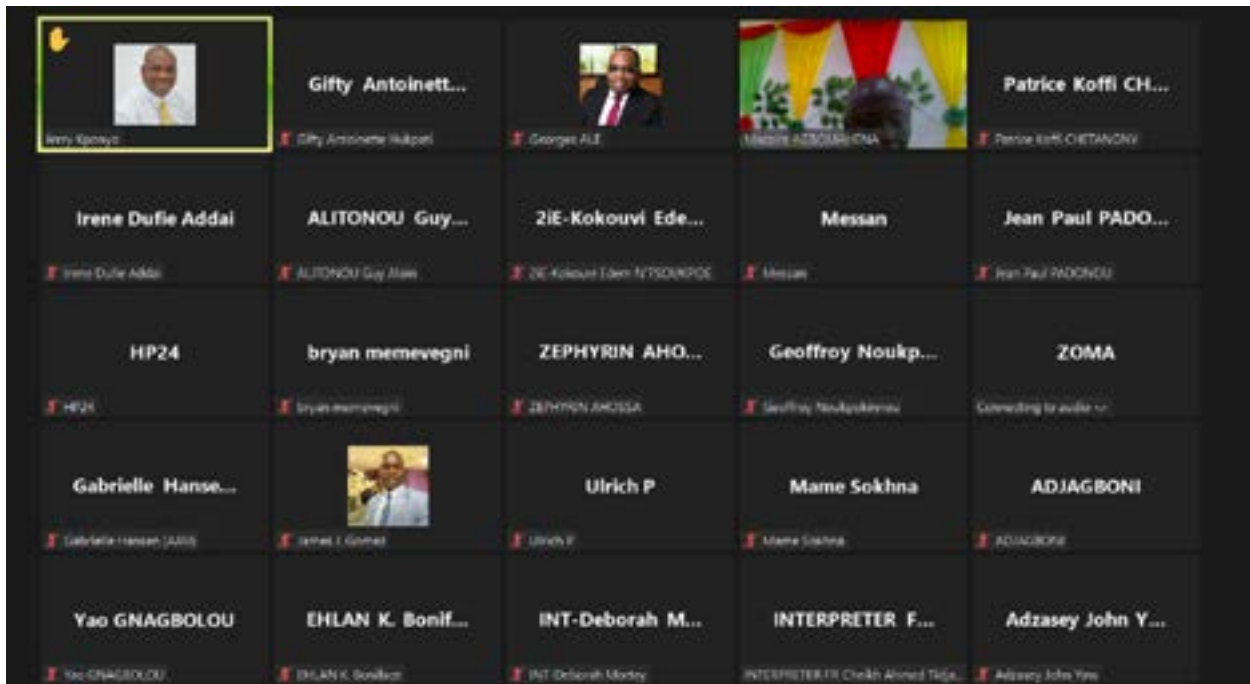
He said recruiting specific personnel outside the KNUST system for specific project portfolios helps achieve targets as these personnel work full-time. Speaking on his personal experience in terms of staff motivation, he said some funding bodies do not give financial incentives to staff, but they support conference participation and other staff capacity-building workshops.

He mentioned that field visits and engagements should be organised to strengthen the academic relationship with industry and the private sector.

In his closing remarks, Prof. Jerry John Kponyo stated that WASEND aims to bridge the gap between academia and industry through structured seminars and capacity-building workshops. He thanked the resource person for his insightful

presentation and for sharing his rich experience with participants. He also thanked the African Association of Universities (AAU) and the translation team for their excellent service. He also appreciated the participants and the WASEND team for making the workshop successful. ■

Engineers urged to develop innovative projects



A screenshot of the presentation slide

WASEND held its fourth capacity-building workshop on the theme, “Managing Engineering Innovations and Incubators in West Africa.” The workshop, which was hosted by the College of Engineering, Université D’Abomey–Calavi, Benin, was held virtually on March 10 2023, with Ing. Dr. Georges Ale, CEO of Societe de Development de Projects (SDP), Benin as the resource person.

In his welcome address, the Network Coordinator, Ptof. Jerry John Kponyo, welcomed participants to the 4th capacity-building workshop. He said that the need to translate research into useful industrial products had been a critical topic for discussion over the years. He said Innovation is crucial in engineering education, and discussing how it can be managed is imperative. He encouraged participants to join

the discussion and hoped for an interactive workshop.

Dr. Patrice Koffi Chetangng introduced the resource person for the workshop as Ing. Dr. Georges Ale. He said Dr. Ale trained in Civil Engineering and holds an Executive MBA from the European Institute of Business Administration (INSEAD). He spent most of his career in construction, infrastructure concessions, and public-private partnerships in Africa.

At the end of 2021, Dr. Ale founded the Societe de Development de Projects (SDP), a project development company based in Cotonou, Benin, to support high-level projects with infrastructure.

Ing. Dr. Georges Ale thanked the network for the opportunity to share his knowledge on engineering innovation. He said he spent the last 22 years

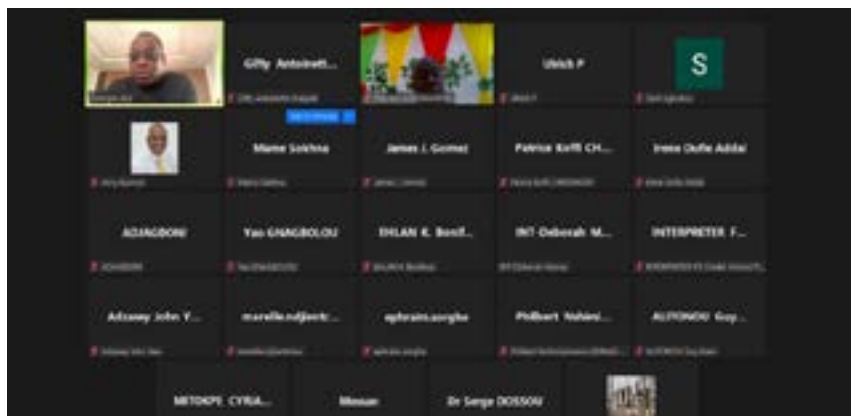
of his career in the corporate world in the construction and infrastructure field and among global leaders.

“I visited many African countries and met diverse people in this capacity,” he said.

Speaking to the theme, Dr. Ale said Engineering and Innovation are two themes that have been married over the years, and engineers have always been a part of Innovation.

Engineering is about finding solutions, making innovative projects a reality, and satisfying the needs of society. He cited countries like France, China, and the USA as some potent sources of Innovation. In contrast, Africa is left behind due to limiting factors such as inefficient processes,

poor funding, and lack of investment.



A screenshot of participants at the 4th WASEND capacity-building workshop.

These limiting factors have evolved in Africa. He mentioned macroeconomic and social indicators as key to engineering innovation. “The ball is in today’s engineers’ and innovator’s court to research societal and industrial needs and fully play their role,” he added.

Dr. Ale explained that Innovation could be classified into new tools, procedures, and transforming jobs and could also be focused on Digital Innovation, Robotic Innovation in Artificial Intelligence, and Biotechnology Innovation. Failure of Innovation in Africa is mainly due to the mismatch of the actual societal needs and the ideas brought up and the poor management of innovative projects. Dr. Ale added that an engineer is an entrepreneur and should have entrepreneurial and leadership skills.

He further stressed that though some progress had been

made in funding Innovation in engineering, more resources are needed to discover ideas and implement the innovation process. He encouraged project management, incubator development, and start-ups.

Discussions centred on the performance indicators for measuring Innovation and the systems academic institutions must implement to support engineering innovation. On how engineers can be innovative in solving real-life problems, Dr. Ale said engineering projects should be linked to real needs and should satisfy real-life needs. On the performance indicators, Dr. Ale said the first step is discovering an innovative idea or identifying a project idea; the next is to move from the idea stage to the implementation stage, and funding at this stage is very critical. He suggested that the Centres of Excellence could unite and

raise funding for innovative projects. Although the private sector presents many great funding opportunities, most institutions must rely solely on government or public funding. Institutions should then measure the number of innovative projects ongoing and the number of abandoned projects. Thus the next step is to evaluate the number of successful projects translated into prototypes.

Dr. Ale further suggested that Engineering education should include innovation training where students are equipped with innovative skills even before they leave school for the job market.

In his closing remarks, Prof. Jerry John Kponyo stated that WASEND aimed to bridge the gap between academia and industry through structured seminars and capacity-building workshops. He thanked the resource person for his insightful presentation and for sharing his rich experience in managing engineering innovations. He said we must make sure we support engineering innovation as institutions. He thanked the African Association of Universities (AAU) and the translation team for their excellent service. He also appreciated the participants and the WASEND team for making the workshop successful. ■

The third WASEND Academic Exchange Programme held at the Université D'abomey–Calavi, Benin



Participants at the exchange programme in Benin.

The third WASEND academic exchange programme occurred at the Université D'Abomey–Calavi, Benin, from July 18 2022 to July 22 2022. Three PhD students from Colleges of Engineering in West African universities participated in this exchange programme.

Paul Victor Jatta, a PhD student from the Department of Mechanical Engineering, represented the University of Science, Engineering and Technology (USET), Gambia; Priscilla Oyeladun Ajiboye, a PhD student in the Department of Electrical and Electronics Engineering at KNUST, Ghana; and Tako Djidoula, a PhD student in the Department of Civil Engineering from Institut International d'Ingénierie de l'Eau et de l'Environnement (2iE), Burkina Faso were participants of the academic exchange programme.

Participants visited the Department of Informatics and Telecommunication of the Université D'Abomey–Calavi, where they met with the Head of the Department, Prof. Djara Tahirou (HOD-IT). Prof Tahirou took them through the various activities and projects his team of students was working on. An example is the development of an application that enables students and colleagues on the same platform to communicate effectively without using Wi-Fi, an internet connection or airtime.

The app was designed for voice calls, video calls and short message service (SMS) at zero cost. A practical session was held where telephone calls were made using the app with the registered phone numbers of participants. Participants could send text messages and make

voice and video calls at zero cost. All the calls were obvious and audible, with the network bandwidth covering over 100 metres area. Prof Djara Tahirou, however, expressed his concern about extending the bandwidth to a minimum of 25km as specified in the device's manual.



Prof. Tahirou (in suit) in a group photograph with Paul Victor Jatta (left), Priscilla Oyeladun Ajiboye and Tako Djidoula (right).

Participants toured the Department of Mechanical Engineering workstation and were introduced to the various research works undertaken and the machines used. They also visited the Department of Civil Engineering, where Tako Djidoula gave a presentation on his research work.

On the last day of the exchange programme, a student symposium was organised for host university students and visiting students to present their research works and share ideas to help improve their research projects.

Participants enjoyed the academic exchange programme and mentioned it was worth participating in. They said it was an undeniable promoter of learning and a significant key to achieving international competence.



Participants touring the Mechanical workstation



Presentation by Prof. Djara Tahiou (in suit) ■

International Institute Of Water And Environmental Engineering (2ie), Burkina Faso Hosts Second WASEND Seminar



The second WASEND seminar was held virtually on July 13 2022, on the theme “Meeting Africa’s Energy Needs Sustainably with Fluctuating Renewable Resources, what are the Challenges for Storage?” Prof. Yao Azoumah, Managing Director of KYA Energy Group, gave the seminar presentation.

The seminar gave insights into Africa’s energy needs, renewable energy and challenges faced in storage.

Prof. Yao Azoumah gave a presentation about the KYA Energy Group and how he developed a sizing method to meet the energy needs in Africa amidst fluctuating resources of renewable origins. Prof. Azoumah held an interactive session with participants where he demonstrated how to use the consumption management software.

In his closing remarks, the Network Coordinator for WASEND, Prof. Jerry John Kponyo, thanked the resource person for his insightful presentation. He thanked all participants for joining the seminar and commended the seminar and symposium team for the excellent work done.

He expressed appreciation to the Advisory Board members who took time off their busy schedules to be part of the seminar and participants from the Association of African Universities and the translation team for their translation services. ■

A third WASEND seminar reveals the flip side of solar photovoltaic (pv)

L'ÉNERGIE SOLAIRE PHOTOVOLTAÏQUE: LE REVERS DE LA MÉDAILLE

Ing. Koffi TOVIAWOU



WASEND has organised a seminar on the theme “Solar PV: Behind the Scenes” has been. The virtual seminar, held via Zoom on November 30, 2022, was facilitated by Ing. Toviawou Koffi, Electrical Engineer at the Compagnie Energie Electrique du Togo (CEET).

In his welcome address, Prof. Kokouvi Edem N'Tsoukpoe, the Centre Director for the International Institute for Water and Environmental Engineering (2iE) in Burkina Faso, pointed out that the focal areas of WASEND are energy and digital development, and these have informed the seminar's focus on solar PV as a renewable energy source.

Ing. Toviawou Koffi is an engineer from the Electrical Company of Togo, the national power utility that provides electricity in Togo, and the Director of Standards, Quality, Security, and Environment. Ing Koffi was also part of a team

that built the 50-megawatt solar power plant in June 2021. He is a licensed trainer in the electricity domain and specialises in the security, construction, and maintenance of power lines.

Ing. Toviawou Koffi spoke on the evolution of Solar PV, the limits to the integration of intermittent electricity production, solar PV energies, and the development of African countries.

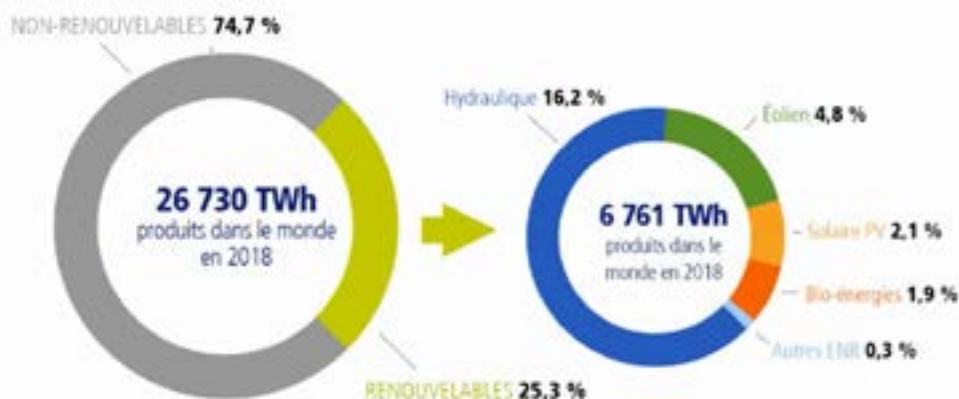
Delivering on the topic, Ing Koffi was of the personal view that developed countries like China, Europe, and America have good fossil sources. He cited France as an example, having 75% of nuclear power as energy consumed. These developed countries have the latitude to install intermittent renewable sources and can quickly resume fossil supply, which constitutes the security of supply in electrical energies. He said this is not the same with African countries.

He iterated Africa's high demand for electrical energy to power railroads, industries, and homes. Africa is also believed to have a high supply of sunlight, so there is a need to capitalise on this demand by producing avenues for harnessing solar energy.

He, however, cautioned that African countries must be careful in fully integrating solar energy as the economy's development cannot be banked solely on renewable energy sources. He revealed that solar and wind power are just like the “icing on the cake,” Developed countries already have the “cake”, but we, as developing countries, do not. He said Africa needs reliable energy sources. He recommended that African countries should build modern nuclear power plants instead to meet the high demand for electrical energy.

L'ÉVOLUTION DU PARC PHOTOVOLTAÏQUE DANS LE MONDE

Le solaire PV dans le monde en 2018



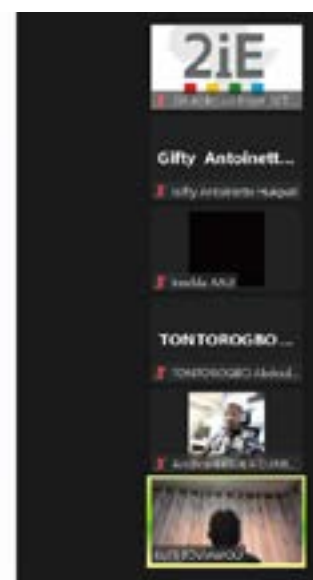
Discussions were based on renewable energy sources and strategies for integrating solar energies into the grid system. Ing. Koffi indicated that the solar PV system should be maintained as part of our energy supply, but there is a need to secure reliable sources to help us develop. He added

that Africa needs partners to fund projects such as electrifying villages and rural areas.

Prof. Kokouvi Edem N'Tsoukpoe, in his closing remarks, thanked the participants and the resource person for the insightful discussions on renewable energies and the way forward for African

countries. He commended the seminar and symposium team for organising such an impactful seminar. He appreciated the communications team, participants from the various WASEND centres, the Association of African Universities, and the translation team for their translation services. ■

Blitta PV Plant : Panels position in the afternoon (around 2 PM to 3 PM)



The Fourth WASEND Seminar Unveils The Status Of Energy Access In Africa



Screenshot of the first slide

The fourth WASEND seminar was held virtually on January 13 2023, with the theme “Obstacles to Universal Access to Electricity: The State of Play, Challenges, and Approaches to Solutions. Mr. Assan Todema, the Head of the Energy Resources Agency at the Energy Ministry, Benin, was the resource person.

In his welcome address, Prof. Jerry John Kponyo, the WASEND Network Coordinator, wished everyone a Happy New Year. He further iterated WASEND’s key focus, energy access, pointing out how the seminar’s theme aligned with that. He mentioned that as the network evolves, a transition session is in the pipeline for another centre to lead the front, as the KNUST Engineering Education Project (KEEP) in the College of Engineering, KNUST has done. He welcomed everyone to the seminar and encouraged active participation.

Dr. Agbomahena Bienvenu Marcaire, the Seminar and Symposium Coordinator,

Benin, introduced Mr. Assan Todema as the Head of the Energy Resources Agency at the Energy Ministry, Benin. Mr. Todema has rich experience in the energy sector, having worked on analysing the resilience to climate change in co-development prospects.

He also worked on energy issues in developing countries and organised the electrical industry in rural areas.

Mr. Assan Todema, in his presentation, touched on the status of access to electricity, the challenges to accessing electricity, and the possible solutions. He said energy is at the heart of development: investments, innovations, new sectors, drivers of job creation, inclusive growth, and shared prosperity. “Energy availability satisfies all basic human needs – water, food, health, and education. Without energy, there would be no drinking water, no hospitals, no schools, no housing, and no means of transport,” he stated.

He reiterated that energy is the basis of all development.



A screenshot of the presentation by Mr. Assan Todema on SDG goal 7.

He iterated that energy has become necessary for growth and that the Sustainable Development Goal (SDG) 7 concentrates on energy, particularly to guarantee access to reliable and clean electricity at affordable cost. He also pointed out that energy feeds all the other SDGs. He further mentioned that in discussing access to electricity, the viability and reliability of electricity must be considered. He listed the positive effects of access to electricity as follows:

- Increase in income
- New employment opportunities, particularly in the non-agricultural sector
- Domestic and recreational benefits
- Increase in productivity
- Improvement in health, education, agriculture, etc.

He mentioned the challenges of access to electricity as follows:

- Poor planning, which does not favour universal access to electricity

- Poor coordination of infrastructure.
- The rigidity of legislation and regulations
- Poor installations
- Poor quality labour and materials used
- Technology rejection
- High cost of electricity access and no access to adequate funding.

for making the seminar successful, with about 100 people joining virtually. He commended the EiE, Benin team for hosting an impactful seminar. He appreciated participants from the various WASEND centres and the translation team for their translation services. ■



A screenshot of Mr Todema's presentation outlining solutions to the challenges listed.

He proposed three leading solutions as follows:

- Flexibility in regulations and legislation to access electricity
- Accepting the technological revolution
- Mobilising innovative financing and funding

Discussions were based on the availability of access to electricity, the economic challenges, and the challenges of certification and equipment.

A participant asked what practical arrangements can be made to provide access to more comprehensive and reliable data for academic researchers. Mr. Assan mentioned that data and its viability are critical. Data is collected annually, and a system enabling suppliers to access data is developed. Efforts must be directed at reducing the imperfections in the data received; such a process may take some time. He then suggested that researchers look at the impact of electricity on our communities as part of their research activities.

Prof. Jerry John Kponyo, in his closing remarks, said the resource person has broken down the key issues in terms of energy access for everyone to understand and said an avenue for him to come over to KNUST as an adjunct lecturer to share his rich experience with students in the energy theme would be explored. He thanked Mr. Assan for his presentation and the participants

Institutional And Legal Environment For The Development Of Electricity Sector In West Africa



The fifth WASEND seminar was held virtually on April 14, 2023, with the theme “Institutional and Legal Environment for the Development of the West African Electricity Sector”. Ing. Kocou Laurent Tossou, the Head of ECOWAS Regional Electricity Regulatory Authority, was the resource person.

In his welcome address, Prof. Jerry John Kponyo, the WASEND Network Coordinator, thanked everyone for participating in the seminar. He mentioned that energy is one of the network’s main focuses, and getting experts to speak on energy access in Africa is a step in the right direction. Thus one of the critical considerations the Network needs to make is the legal environment and framework within which energy strives. He expressed gratitude for having an expert speak on the seminar’s theme.

Ing. Kocou Laurent Tossou stated that the electricity market starts with legal and regulatory provisions, and whatever is done must be based on those provisions.

He emphasised the need for resources to be shared and exploited to ensure efficiency in the electricity market. He stated the need for a regional electricity market.

“There is a need for the sub-region to have a harmonised market to ensure efficiency,” he said.

With regards to the ECOWAS energy sector institutions, he mentioned that the first to be established was the West African Gas Pipeline Authority (WAGPA), followed by the West African Power Pool (WAPP) and the ECOWAS Regional Electricity Regulatory Authority (ERERA).



Touching on the legal and institutional framework, the resource person stated that the functions of the regional regulatory body include, among other things, ensuring the progressive establishment and guarantee of free and

open access to the Network, defining nondiscriminatory rules of exchange and dispute resolution, ensuring compliance by all stakeholders, harmonising legislation and operating standards, and promoting and monitoring competition.

He emphasised that establishing the regional electricity market aims to create a technological, organisational, legal, and economic framework in which electricity may be sold and bought transparently at a competitive and affordable price for the benefit of the West African population. This makes the roles of the regulatory body key to the smooth running of the electricity market within the region.

Dr. Agbomahena Bienvenu Marcaire, the Seminar and Symposium Coordinator, Benin, said WASEND would have to work with institutions like the West African Gas Pipeline, West African Power Pool, the ERERA and ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE) to utilise resources efficiently.

Participants' questions and discussions centred on plans to boost the energy departments of ECOWAS, the ECOWAS body in charge of sanctions and how a country can use its resources efficiently.

Ing. Tossou responded to the questions by saying that the African electricity companies seek to coordinate all the power pools within Africa to give them harmonisation, with an overall goal of attaining a single African electricity market. Also, ERERA is the ECOWAS regional body in charge of sanctions and has instituted directives for sanctions and monitoring activities in the market.

Prof. Jerry John Kponyo, in his closing remarks, expressed his gratitude to the presenter for his outstanding presentation. He said that beyond the interaction with WAPP, there is a concern to take the Network to the next level and drive the capacity building and the energy access debate. He thanked everyone for their participation in the seminar. ■

Université D'abomey–Calavi, Benin Hosts Fourth WASEND Symposium

WASEND'S 4TH SYMPOSIUM (SYM)

THEME
The Hydrogen Vector for the development, promotion and valorization of Renewables Energies for West Africa.

GUEST SPEAKER
Prof. Basile Kounouhewa
(Professor of Atmospheric Physics at University of Abomey - Calavi)

DATE
Friday, 29th July 2022
1:00pm – 5:00pm (GMT)

Join Zoom Meeting
Meeting ID: 884 8009 9014
Passcode: 224969

PARTICIPATING ACES (African Centers of Excellence)

- (CAE-DRI) Burkina Faso
- (CAE, DEI) Benin
- (CTTI) The Gambia
- (CAE, KNUST) Ghana

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- Production and utilisation of biomass briquettes in an improved multipurpose cook-stove: A case study of the Gambia.
- Sizing and performance comparison of two (2) types of permanent magnet synchronous generators for producing electrical energy by a wind turbine in three (3) areas of Benin.
- A cryptography scheme based on artificial neural network for Advanced Metering Infrastructure (AMI) security.

Dr. Chux Daniels, a member of the WASEND Network Advisory Board, and Dr. Victor Ayisi Atiemo-Obeng, a member of the KNUST Engineering Education Project (KEEP) Industrial Advisory Board, joined the symposium to give their inputs and comments on the various presentations.

In his closing remarks, the Network Coordinator for WASEND, Prof. Jerry John Kponyo, thanked all presenters for their insightful presentations. He thanked the Advisory Board members who took time off their busy schedules to be part of the symposium, participants from the Association of African Universities, and the translation team for their translation services. ■

WASEND held its fourth Symposium on July 29 2022, virtually via Zoom. Prof. Basile Kounouhewa, the guest speaker and a Professor of Atmospheric Physics at the Université D'Abomey–Calavi, gave a presentation on the theme, “The hydrogen vector for the development, promotion, and valorisation of renewables energies for West Africa”.

Sixty-five (65) participants joined the fourth symposium hosted by the College of Engineering, Université D'Abomey–Calavi, Benin.

The symposium aimed to give the hydrogen vector perspective in the development

and promotion of renewable energies in West Africa and also give the opportunity to postgraduate students to present their research outcomes for comments and inputs from faculty members and industrial players present at the symposium.

Four (4) postgraduate students from the various Colleges of Engineering gave presentations on the topics,

- Modelling and prediction of electricity consumption in Benin with a view to the supply–demand balance by 2030.

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WASEND Info

Website: WASEND.org

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For enquiries about WASEND, you can send a mail to WASEND@knust.edu.gh or contact the Administrative Manager, WASEND on 0502519057