

# EDUCATORS DRIVE ENERGY ACCESS IN HIGHER EDUCATION

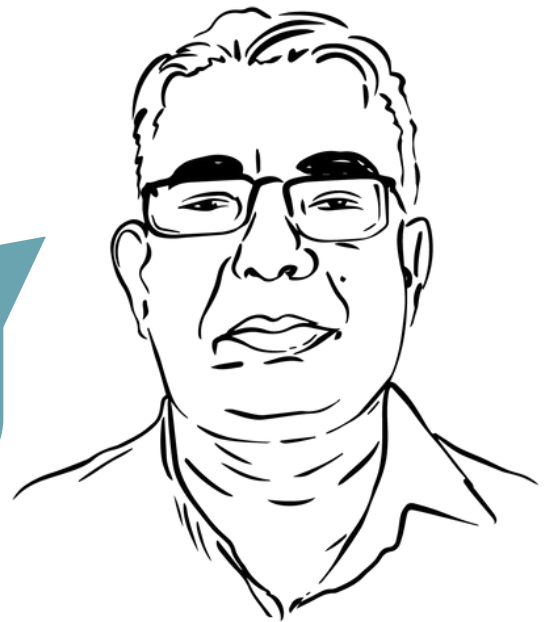
The pressing need to transition to clean energy in the Global South presents several challenges, the most urgent is the need for skilled professionals in the energy access sector and technologies that meet the needs of numerous off- and weak-grid communities living in this part of the world. There is great synergy in these areas, with committed individuals in energy education driving this agenda, while building their universities up as holders and communicators of a growing body of knowledge and skills that support the energy transition.

The Transforming Energy Access - Learning Partnership (TEA-LP) and the Efficiency for Access Design Challenge (the Challenge) are two programmes that have supported educators and students alike since their inception in 2019. The TEA-LP network supports 30 partner universities to deliver MSc programmes in clean energy and the Challenge provides an opportunity for students and universities to compete in a global, multi-disciplinary competition that drives affordable, high-performing off-grid appliances and enabling technologies.

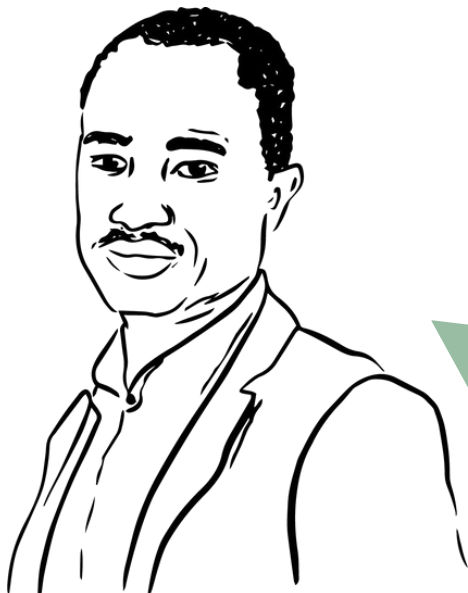
Professor Khosru Mohammed Salim from the Independent University, Bangladesh (IUB), Professor Emmanuel Menya from Gulu University in Uganda, Associate Professor Ogheneruona Diemuodeke from the University of Port Harcourt (UNIPORT) in Nigeria, and Professor Joseph Obbo from Strathmore University in Kenya are four such educators. Below they share their experiences and insights about being part of the TEA-LP and the Challenge.

What motivated your department to join these programmes?

“Some of our students have a strong interest in renewable energy and power applications and they are easily motivated to participate in the Challenge. Our department wants to be renowned in this particular area where the country needs more technically skilled human resources” - KMS

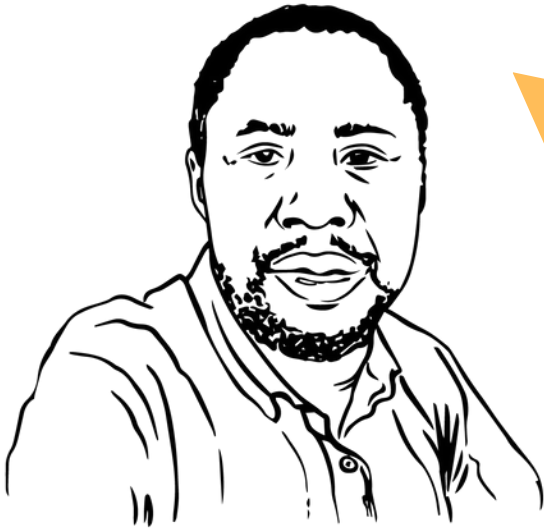


**Khosru Mohammed Salim (KMS), IUB**



“The alignment between the aims of our existing programme and the TEA-LP: The curriculum development, the multi-disciplinarity and the renewable energy focus of the TEA-LP were the pillars that anchored our motivation.” - OD

**Ogheneruona Diemuodeke (OD), UNIPORT**



**Emmanuel Menya (EM), Gulu University**

“A need to bridge the skills gap in the off-grid energy access sector in Uganda through development and mounting a relevant MSc curriculum, and to harness opportunities within the TEA-LP network that could foster future research collaboration. We leverage the opportunity [of participating in the Challenge] to inspire and motivate [students] towards the field of off-grid energy access and undertake renewable energy studies at postgraduate level, thereby feeding into our developed MSc programme.” - EM

## How have these programmes supported your students?

“Through the Challenge the students gain technical and communication skills that help them in getting jobs. [One of the students] participating in the Challenge, whose team received [a] gold award, got multiple job offers because of the skills he gained through the Challenge. Another student, whose team received [a] gold award and I received research grants jointly from IUB to develop a pilot project for our university’s canteen in managing organic waste according to the design he and his group worked on in the Challenge.” - KMS

For the Challenge students it could be, “an opportunity to be mentored by industry leaders on finding solutions to real-world problems in the energy access sector, their employability skills have been honed through the webinars organised by the Challenge team. Our students have also had the opportunity to prototype their ideas through access to the prototyping funds.” - EM

"The Challenge helped our students to provide balanced context-sensitive energy solutions, which invoke critical thinking, project management and stakeholder engagement. The Challenge was used to drive a course, 'Design Project and Graduate Seminar', in the MSc Energy Access and RET programme...The driving force for the designs featured by our students in the Challenge was anchored on the TEA-LP courses." - OD

“The Challenge has helped [deliver] related course units and [participating] students have been able to apply the concepts and principles in the course units to solve real-world problems...Most of our former students who are now working in energy-related companies once participated in the Challenge, a testament that their participation was presumably impactful, for instance, several [students] are sales engineers at a company [focused on] solar energy solutions. [Another female student now] works at Uganda's Ministry of Energy and Mineral Development...” - EM

## What have you learned from participating in these programmes that will help you in your future work?

“Different perspectives of viewing the innovations [and] the ability of the students to provide real life solutions.” - JO

“Through TEA-LP, I was exposed to different concepts relevant to curriculum design, such as sector needs assessment, stakeholder engagement, formulating programme overview, curriculum structure, fundamental curriculum and full curriculum blue-print. I will use the attained skills to support my department and others in designing new curricula but also during review of existing curricula.” - EM

“National and international networking and connections are very important.” - KMS



**Joseph Obbo (JO), Strathmore**

“I gained skills and competencies in curriculum development and student assessment, which will help me to advance my teaching career. Furthermore, I acquired outstanding leadership and project management skills.” - OD

## Have these programmes helped build networks with other universities?

“The network could be extended to other universities. It will enhance the reputation of my department and university.” - KMS

“University of Port Harcourt enjoys a network of universities in the clean energy access through its involvement in the TEA-LP programme.” - OD

“We have built strong networks with several universities, including Makerere and Kyambogo universities in Uganda. For instance, academic staff at these universities supported us in the curriculum design of the MSc programme. They took part in several activities during MSc curriculum design. They also continue to closely work with us as we implement the MSc curriculum. We are also collaborating in research and publication activities. Through the mounted MSc curriculum and joint research and publication, our visibility locally and beyond has increased.” - EM

## What could be done differently?

“There is a need to harmonise final year research activities with the Challenge so students do not feel overwhelmed. And for the TEA-LP, there is a need to help less equipped universities to acquire relevant equipment for effective delivery of the MSc curricula.” - EM

“I believe the network within the TEA-LP could be used for collaborative grant applications to drive the programmes. That is, TEA-LP could leverage its network for purposeful grant applications for sustainability.” - OD

## What has been the most significant thing that you have learnt from participating in these programmes?

“I gained valuable experience in developing curricula tailored to the needs of a particular sector and navigating the accreditation process.” - EM

“Globally still a lot of people live in off-grid areas and we need to work more on distributed renewable energy systems and energy efficiency to develop technology for them.” - KMS

## What are you expecting from the design of new curricula?

“A need to design new curricula is typically driven by the demand to address specific societal needs. As a department, we regularly engage key stakeholders to evaluate and form a basis for revising our academic programmes, ensuring they align with evolving societal needs. When specific needs arise, and with the requisite human resources and research infrastructure in place, new programmes are designed to respond to identified societal needs...The skills and competencies acquired through the TEA-LP curriculum design project are already being leveraged to develop a relevant PhD curriculum.” - EM

\* Educators' responses have been redacted for readability.

Connecting with these motivated educators has shone a spotlight on the benefits that both the TEA-LP and the Challenge bring, as well as highlighting areas for growth.

Highlights are:

- Curricula development in higher education is essential to drive clean energy access
- Parallel programmes create innovation and momentum in the energy access sector
- There is opportunity to leverage networks for more meaningful collaboration in research, grant applications and funding

The TEA-LP programme launched in 2019, supporting 8 universities in Sub-Saharan Africa. Since then it has grown to expand geographically to South Asia and Pacific supporting 30 universities undertaking energy access modules to their masters' students.

The Efficiency for Access Design Challenge launched in 2019 with 9 universities in Sub-Saharan Africa and South Asia. Since then over 500 students from 40 universities have participated developing over 120 innovative ideas helping accelerate clean energy access globally.

Both programmes have been collaborating over the years through outreaching universities' networks, amplification of communications, scoping new opportunities, leveraging partnerships and generating synergies and opportunities for participating educators and students, and knowledge and learning sharing, with an overarching added value to the impact of both programmes. The Efficiency for Access Design Challenge programme is funded by UK aid, from the UK government via the Transforming Energy Access platform and the IKEA Foundation. TEA-LP is housed under the African Climate and Development Initiative at the University of Cape Town and is also funded by UK aid under the Transforming Energy Access platform.