# Energy Modelling Platform for Africa (EMP-A) | 2026

## Concept Note

### Context

Secure, adequate, and reliable access to modern energy forms and services for livelihoods and industrialisation is critical for attaining Africa's sustainable and inclusive development transformation, framed by the African Union's Agenda 2063 and the UN 2030 Agenda for Sustainable Development. This will simultaneously bring about resilience to shocks posed by climate change.

Against a background of increased energy demand for structural transformation, a rising population, the need for sustainable livelihoods, and the adverse impacts of climate change on the continent, there is an urgent need to support African countries in strengthening their capacities in energy planning. This will optimise investments in energy production and services to take advantage of the continent's abundant renewable energy resources, falling technology prices, and increasing availability of free open-source, and robust energy planning models, data, and interfaces for customised applications that suit the needs of each country.

Furthermore, almost all African countries have included renewable power generation in their Nationally Determined Contributions (NDCs) to climate action under the Paris Agreement framework. The prominence of renewable energy in these actions, coupled with Africa's abundant renewable energy resources (including variable renewable energy sources such as wind and solar) and the urgent need to mobilise investments to meet a considerable energy deficit on the continent, requires strategic assessment planning. This is needed to ensure (i) enough generation capacity and expansion of supply to meet demand, (ii) system flexibility to accommodate high shares of renewables, (iii) adequate transmission capacity to dispatch power to demand centres, (iv) grid stability to accommodate short time frame variations, (v) appropriate and effective off-grid systems, (vi) optimised investments that capitalise on falling costs of low-carbon technologies to minimise the risk of stranded underperforming energy infrastructure assets in the future, and (vii) sustainable and coordinated use of energy, land, and water resources. Climate action has gained even more credence in light of the ongoing energy transition and growing calls for Africa to define net-zero emission targets. Yet, much of Africa has a considerable deficit in human and institutional capacity for effectively using models and modelling tools for energy supply, demand, and investment planning and management.

To date, six rounds of the EMP-A, namely EMP-A 18, EMP-A 19, EMP-A 21, EMP-A 23, EMP-A 24 and EMP-A 25 have taken place, witnessing growing participation and resounding calls for more of these dedicated sessions. EMP-A 2026 dates are **yet to be finalised** but will take place over a **three-week period during January** at the **University of Cape Town (UCT) in Cape Town, South Africa**.

CCG is introducing a more structured, long-term approach to capacity development. While one-off attendance is still available, for certain courses in the EMP-A we will be prioritising applications that area part of a longer process, known as Bootcamps. These involve more in-depth, extended engagements (typically 6–18 months) that produce a clear output. Detailed information about the Bootcamps and application options can be found below.

### Objective

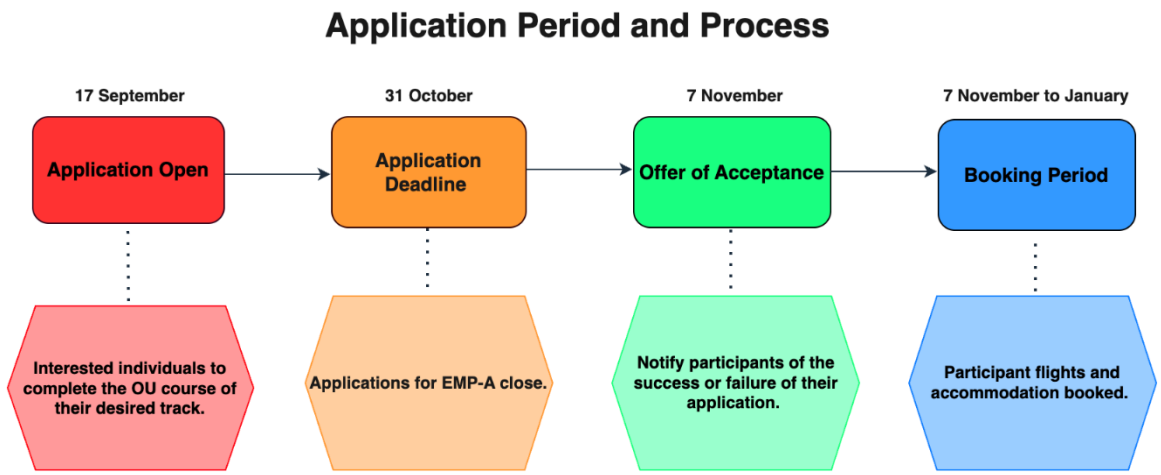
Although the EMP-A acknowledges that different countries and regions within Africa will require context-specific approaches, the overarching objectives of the platform are to:

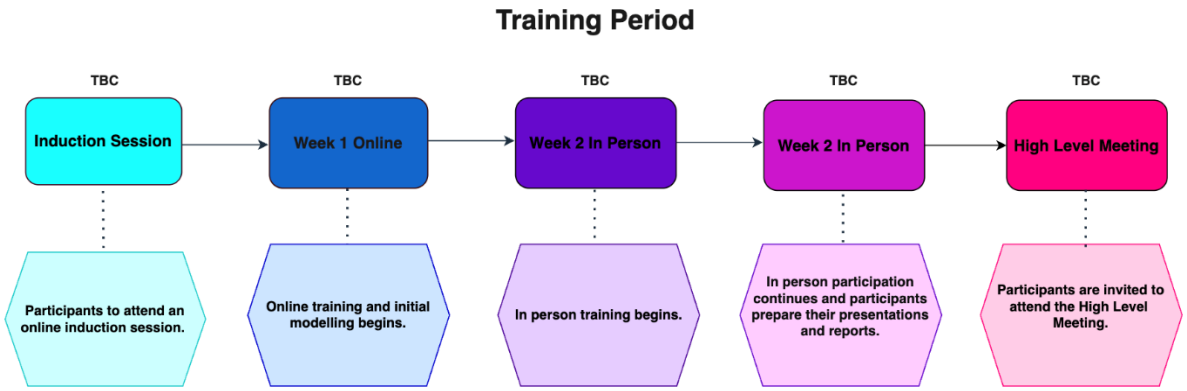
- Gather the energy planning and modelling community in Africa to share experiences, models, and data in climate, land, energy, and water systems.
- Support human and institutional capacity in Africa for integrated energy modelling and investment planning.
- Support the development of centres of excellence for energy planning in Africa.
- Promote efficient and widespread use of open-source modelling tools to support the implementation of the SDGs, the Paris Agreement, Africa's Agenda 2063, and the UN 2030 Agenda for Sustainable Development.

## Structure of the EMP-A 2026

This year's EMP-A will be held in person.

The application period is as follows, please make note of the dates below:
The application period will shortly be followed by the training period, see below for dates and details.






*Please note, the "Electricity Transition Playbook" is an in-person week-long course, likely taking place in Week 3 (this will be confirmed later).*

During EMP-A 26, you will acquire energy and resource modelling skills using one of the following open-source modelling tools for sustainable development pathways, under leading academics and researchers in the field of model-informed development strategies. There are ten tracks (all available via this link; for French versions of some tracks visit this link. They will focus on either:

**• OnSSET / The Global Electrification Platform**

This course will help you learn about geospatial energy modelling, how to build your own electrification analysis, how to include the geospatial dimension in your energy modelling and understand the earth's different energy resources, and how to incorporate these into your energy modelling.

**• Energy and Flexibility Modelling: OSeMOSYS and IRENA FlexTool**

This course will help you understand what investments are needed, when they are needed, and at what scale in the energy sector to meet the growing demand for energy while addressing security, environmental, and other constraints. Special considerations will be made for modelling the flexibility of the electricity system, to account for high levels of renewable penetration.

**• FINPLAN (Financial Planning of Energy Infrastructure) and Investment Pipelines**

This course will provide you with basic knowledge on financial theory, will show you how financing works in the power sector worldwide, with primary focus on developing countries. You will also learn how to carry out financial analysis of power projects using FINPLAN.

**• MAED (Model for Analysis of Energy Demand) and the Energy Balance Studio**

This course will teach you how to use two of the International Atomic Energy Agency's (IAEA) modelling tools: the Model for Analysis of Energy Demand (MAED) and the Energy Balance Studio. Along the way, you will also learn about energy balances and energy systems in general, helping to strengthen skills in energy system planning.

**• Introduction to CLEWs: Climate, Land-Use, Energy, and Water Systems**

This course will teach you how to analyse policy decisions on issues such as promoting clean energy, competition for water, and agricultural modernisation. It will involve demonstrating how to define model components, link them in an integrated system representation, populate the model with data, run the

model, and interpret results using CLEWs.

• **Electricity Transition Playbook**

This course will guide you through the key steps required to successfully deliver an electricity system transition. It uses an engaging "lectures and case studies" approach to show how to create a long-term vision for the electricity mix. You will gain an understanding of the key elements of political support, policy and regulatory delivery mechanisms, network infrastructure, and operational requirements (all framed by enabling technologies, supply chain and workforce needs, and consumer and public buy-in). You will also bring your own case study to the course (eg a country or region) to work on collaboratively with convenors and other participants. This will bring the course material to life and ensure practical value when returning home.

*Please be advised, this course is an in-person week-long course, not a three-week course, and will take place in the final week of the EMP.*

• **MicroGridsPy and RAMP**

This course will introduce you to the use of two open-source models. The first, MicroGridsPy, optimises the sizing of rural microgrids based on locally available renewable resources and the community's load demand. These are then simulated through a second model, RAMP, which is designed to estimate the electricity demand of rural isolated communities based on their appliance ownership and usage pattern data.

• **Energy Access Explorer: A data–driven, Integrated and Inclusive Approach to Planning for Achieving Universal Access to Energy for Equitable Development**

EAE will introduce you to the importance of spatial data and analytics for providing actionable insights on expanding clean energy services for socio-economic development. You will work on practical, hands-on activities to identify high priority areas for energy access interventions, using the front-end of the application. You will also be introduced to, and work on, the back-end infrastructure (through the user-friendly interface of the dynamic information system) to develop an EAE application for a chosen geography.

• **GeoSpatial Data, best practices for collection and management**

This course is aimed at energy planners, utility representatives, and IT specialists supporting energy planning efforts. You will get an overview of different types of geospatial data sources that can support modelling efforts, with a focus on open data, data quality standards, best practices, and state-of-the-art tools for data collection, manipulation, spatial data infrastructure (SDI), and management, This includes how to best document the data to allow replication and update of models as new data becomes available.

• **Geospatial Clean Cooking access modelling, using OnStove**

In this course, you will be introduced to OnStove, an open-source spatial clean cooking tool that identifies the best cooking solutions across any given area based on its costs and benefits. The course will take you from start to finish, from creating your own spatial repository to modifying your spatial data, calculating the net benefits of different cooking solutions and lastly visualising and presenting your results.

**Each course has two parts:**

• **Self-paced study**:

You will complete the Open University course of your choice and attach the certificate of completion on the application form. After being accepted, an Induction Session will take place, where a general introduction to the course will be given. Week 1 of the EMP will be conducted online. Coaching and troubleshooting sessions will be scheduled to support you with modelling knowledge.

• **In-depth hands-on training** Week 2 and Week 3

These weeks are comprised of an interactive component with dedicated trainers (except for the Electricity Transition Playbook, which is an in-person week-long course and will most likely take place in Week 3). You will receive further coaching and training on using the tool from your chosen track for a national case study. You are expected to develop a report and an 'elevator pitch' presentation for a senior decision-maker. Finally, you will give a Presentation and complete a Report at the end of Week 3. Feedback will be given based on these presentations.

You will receive a certificate on successful completion of the training, once the presentations and reports have been completed.

**The last day of the EMP will be dedicated to a closing event for EMP-A 26.**

The substance of the event is yet to be determined with event hosting partners.

**Application**

There is no fee to attend; however, competition for space is high, and space is limited.

Please note that there are four types of application:

- **Scholars' Bootcamp** – The Scholars' Bootcamp is designed for academics (alumni or newcomers) and involves a 6- to 12-month engagement. At the end of the Bootcamp, the team produces a research paper, submitting it for peer-reviewed publication.
- **FlatPack Bootcamp** – The FlatPack Bootcamp is also aimed at academics (alumni or new). This is a 6-month journey that begins with hands-on training in one of CCG's energy or financial modelling tools. After the initial training, academics receive ongoing support from CCG experts to help them adapt and enrich their existing courses. The goal is to successfully embed one or more of the tools available at this EMP-A into the curriculum of a BSc, MSc, or PhD programme.
- **Partners' Bootcamp** – The Partners' Bootcamp is designed for international organisations running technical assistance (TA) projects. It typically spans 6–18 months, depending on the TA needs. During this period, the international organisation can use this service to provide the capacity-development needed to upskill local teams in energy or financial modelling, instead of handling the training themselves. Additionally, the Bootcamp will also support the production of the final deliverables, such as reports or technical documents.
- **One-off attendance –** This form of attendance matches the regular EMP attendance, whereby there is no long-term engagement envisioned. If your attendance is with a pre-determined sponsor, please apply here.

All information regarding the various bootcamps can be found here.

***Please note, for OSeMOSYS, CLEWs, FINPLAN, MAED, OnSSET, and EAE, Bootcamp applications will be prioritised during the selection process. For other tracks, one-off attendance will be prioritised. This means that your chances of attending the EMP are higher if you apply for a Bootcamp.***

*Applicants interested in participating* in the EMP-A are required to complete the application form with the attached using the link below:

https://loughboro.qualtrics.com/jfe/form/SV_81YQ35WZIISJ4eq

Upon opening the form, you must select what you are applying for (eg Scholars' Bootcamp, FlatPack Bootcamp, etc), after which details of the application are provided. Make sure to follow the instructions as set out on the application page. The application asks for personal detail and requests information on current job responsibilities, motivation for the application, fields of interests, and so on. This information from will be taken into consideration for the application process.

For all types of applications you must:

1. **Attach the Open University certificate** of completion for your chosen track to your application.

2. **Attach the 'Modelling, policy and political economy'** course completion certificate available on the Open University website to your application form.

3. Provide additional required documentation, such as a commitment letter, letter of motivation, or otherwise as listed on the application page.

4. Extra information, as required by the application type (for example, the Scholars' Bootcamp requires a 'research proposal'. Please see the form for more details.

The deadline to submit the application form for participants who wish to **attend in person** is **12.00 pm (GMT) 31 October 2025**. If unsuccessful, you may still be considered for online participation. It should be noted that spaces are limited, and the application process is highly competitive.

PLEASE NOTE full-time commitment to the EMP-A is crucial as is full-time attendance at teaching sessions.

**Funding for in-person participants**

Funding will be made available for some in-person participants to cover the cost of flights and/or accommodation (**funding will be prioritised for Bootcamp applicants**). However, participants not selected for funding can still attend at their own expense or can be funded by other organisations. Please specify in your application if you wish to be considered for funding.

**IT requirements**

Note that participants will require a computer with stable internet access to participate in the training. It is recommended, for all tracks, that participants have at least 8 GB of RAM and a relatively new

computer. Specific Tracks have additional computer requirements above and beyond this minimum:

• CLEWs - Windows 10 computer

• Energy and Flexibility Modelling: OSeMOSYS and IRENA FlexTool - Windows 10 computer, 8GB RAM, MS Office with Microsoft Access.

**Partners**

In alphabetical order:

• African Climate Policy Centre – United Nations Economic Commission for Africa (ACPC UNECA)

• Centre for Global Equality (CGE)

• Clean Cooking Alliance

• Climate Parliament

• Climate Compatible Growth Programme (#CCG)

• Energy Sector Management Assistance Program (ESMAP)

• German Cooperation for International Cooperation (GiZ)

• Green Grid Initiative (GGI)

• International Atomic Energy Agency (IAEA)

• International Renewable Energy Agency (IRENA)

• Imperial College London (ICL)

• Kartoza

• KTH Royal Institute of Technology (KTH)

• Open University

• OpTIMUS Community of Practice

• Politecnico Di Milano

• Simon Fraser University

• Sustainable Energy for All (SEforALL)

• The Loughborough Centre for Sustainable Transitions: Energy, Environment, and Resilience (STEER)

• University College London

• United Kingdom Foreign, Commonwealth and Development Office (UK FCDO)

• United Nations Department of Economic and Social Affairs (UNDESA)

• United Nations Development Programme (UNDP)

• University of Cambridge

• University of Cape Town

• University of Oxford

• University of Strathclyde

• World Resource Institute (WRI)

• World Bank Group (WBG)

• 2050 Pathways Platform

**Further information contact:** inquiries@optimus.community or r.yeganyan1@lboro.ac.uk or r.mcgrane@lboro.ac.uk