



AEF

AFRICAN ENERGY FUTURES

African Energy Futures  
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# Information Sheet

## African Energy Futures summary

Africa's energy future must be planned by Africans, for Africans.

African Energy Futures (AEF) will support the creation of a community of research hubs that empower African experts to shape energy policy and investment decisions in their countries and across the continent. These hubs will deepen in-country understanding of energy transition pathways and impact energy planning with a focus on development outcomes.



Why do we want to do this?

Effective energy planning is a multi-year, iterative and inclusive process. It requires policymakers and researchers working together to understand nuance and explore scenarios. Energy planning is as much a capacity building process as it is a modelling and research process. Yet, today African policymakers and investors make decisions relying on donor-funded single studies delivered by international consultants with a paucity of data. 60% of research on African energy systems involves no African authors. No wonder Africa suffers amongst the lowest energy investment rates when compared to the rest of the world.

We believe this demands a fundamental shift in Africa's energy research infrastructure. Researchers and think-tanks need long-term funding that allows institutions to invest in people and modelling infrastructure. Policymakers need long-term

relationships with local researchers who understand the country's political, social, economic, and environmental constraints and opportunities - teams they can trust.



African Energy Futures' approach

AEF will channel international philanthropy and donor support into three-to-five-year funding support for "hubs" of research institutions, think-tanks and policymakers focussed on energy decision making in a particular country (or region, or topic). This will allow the hubs to invest in academic staff and modelling infrastructure and build the overall human capability base.

The AEF team will provide these hubs with technical support to develop good future proposals, develop inclusive processes, connect them to partner-driven training, further resources, and help them tell compelling stories that will attract policymaker and industry interest. Alongside technical support, AEF will provide coordination support to this growing community, strengthening the African voice through connecting them to each other, international partners, and other support.

Over time we will establish 20 such hubs who will anchor an African network focussed on African solutions, and who will train over 400 African energy analysts. Better capacity will result in better planning and therefore better policy and investment environments.

# The importance of capacity building in a just transition

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We cannot achieve a just transition without developing countries having the ability to set and pursue their own agenda. At the root of the widening gap between developed and developing nations is capacity building. Without building the capacity to plan and implement alternate development pathways our global efforts for justice, via technology and finance will remain ineffective. This is why capacity building is one of the three focus areas defined by the UNFCCC as Means of Implementation (MOI - alongside finance and technology).

It is however, widely acknowledged that capacity building is the least favoured child of the three MOI, and global efforts to build capacity are typically focussed on individuals and weakly coordinated. Capacity building thus far has not been successful, or at best has uneven outcomes, which requires us to think differently.

Climate Works report that investment in capacity building lags other areas. "Of the 1.7 USD billion foundations invested in climate during 2022, only 65 USD million of this was for capacity building and a major part of this was channelled to the global North".

Capacity building cannot just focus on individual knowledge, skills, training, and experience. It must also include institutions and the systems in which both institutions and individuals operate. Individuals must have a series of institutional homes through which they can map a career. There needs to be an environment in which multiple players (think-

tanks, academia, research institutions, policymakers, business, communities) can both share their knowledge and influence the research trajectory.

Given that capacity is highly contextual it is critical that capacity building efforts are local and led by developing nations. We need to rethink how we do capacity building in a way that coordinates the efforts of a range of capacity building proponents to build capacity of individuals, institutions, and ultimately systems. Capacity building needs to be focussed on developing countries and must be led and implemented by local agencies, who are free to draw support from a coordinated network of evolving and targeted support.

Locally led capacity efforts enable an effective analysis of where gaps lie and where potential can be stimulated. They are sensitive to local socio-economic needs and local political economy constraints. Having a locally led and coherent plan will lead to better enabling environments and stronger investment, and therefore better developmental outcomes. Without locally led and locally focussed capacity building the dream of self-determination and its role in alleviating global inequality will remain out of reach.

AEF is therefore building a partnership of institutions whose collective and coordinated efforts will address the need for local, multi-disciplinary, and inclusive capacity building, while focussed on individual, institutional and systemic impacts.

# The problem we need to solve

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## Africa must move from overlooked to economically influential

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Global energy and economic policy largely marginalise Africa. With Africa's growing population, carbon sequestration potential, agricultural and critical mineral assets, Africa has the potential to change its power relations with the world. Yet at the same time it is currently one of the most impoverished regions in the world and any equitable and just transition must focus on building the prosperity of Africans.

The result of growth could cause Africa's energy demand to surge by at least 75% by 2050. This will be primarily driven by GDP growth needed to eradicate poverty, population growth, and the industrialisation needed to diversify African economies, all underpinned by energy growth and access. Projections suggest that 2.4 billion people could live in Africa by 2050, driving demand. A 40% increase in energy demand from industrial and agriculture sectors is projected by 2030.

Development and energy are interlinked. But with only 3% of renewable energy investment going to Africa things need to change. While renewables are not the only energy option, their continued increasing affordability make them a central consideration. Africa has 60% of the best global solar resources, with 10 TW of potential. There is the opportunity for 476 GW across other renewables – hydro, wind, and geothermal.

A stronger focus on energy planning in Africa is also critical to justice. Over six hundred million people in Africa lack access to energy, and even when they have access, they may not be able to afford to use it. Per capita energy consumption in sub-Saharan Africa is 180 kWh per year (excluding South Africa). When compared to 13,000 kWh in the US and 6,500 kWh consumption in Europe it lays the dual problem of electricity supply and access bare.

## Local planning and modelling are critical to shape the transition conversation

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Access to sustainable, secure, and affordable energy is a critical enabler of development, but energy planning in Africa is complicated by constrained political and fiscal environments and a range of social and economic objectives. Energy systems modelling allows for more accurate planning and provides both investors and policymakers critical quantitative data they need to make decisions. Energy systems modelling and analysis allows the development of a wide range of potential pathways, providing critical guidance to policymakers around feasibility, risks, affordability, trade-off, opportunities, and political traction. Models and modelled data can significantly influence local and international politics and change existing power imbalances.

However, instances of modelled energy plans in Africa are low, or are driven by one time consulting-led and donor commissioned studies. Studies that generate trust and long-term engagement are needed.

In an age of misinformation, trusted, independent academics and expert institutions are critical partners

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The 2024 Edelman Trust Index shows people are more likely to accept green innovation when vetted by scientists or experts, who are also the most trusted group to tell the truth on innovation and new technologies. The latest (2025) World Economic Forum global risk report lists misinformation and disinformation as one of our most immediate global risks. Robust research plays a critical role in establishing a reliable fact base, building trust, and providing a platform from which media and civil rights groups can work.

But academia and expert studies are dominated by non-African institutions, resulting in weak local ownership and credibility

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African energy institutions are underfunded, understaffed, or entirely absent. Over 60% of research in the space is done by non-African institutions and researchers. Donor funding supporting African research is often insufficient, patchy, and short term. The lack of African involvement means plans are disconnected from local context (especially the socio-economic-political context). Furthermore, poor local involvement often means there is insufficient analytical rigor because tools, concepts and data applied are out of date and not adapted to the local context.

Local knowledge and skills are critical to inject into energy studies. There are strong academic institutions in Africa that, but for appropriate resourcing and demand, are well positioned to support energy policy setting in their countries and regions. Universities play a major role in training and retaining talent in this ecosystem. There is also huge potential to work with the extremely qualified and experienced African diaspora.

There are however challenges within academia (local and international). Long study timelines are often disconnected from the urgency of the problem. Academics are not always the best communicators, and their work may sit unused, or their work is framed in ways that don't appeal to policymaker's core interests. Notably, academic work is often too narrow and ignores economic, justice and poverty metrics, which are generally the main concerns for policymakers. Only 10% of studies on African energy consider these social metrics. Data can be inconsistent, unreliable, and difficult to get, although in some cases merely requires aggregation. It is often not possible to secure data for single once off studies, or if that data is discovered it is held by international institutions with limited sharing.

Policymakers are also challenged

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Capacity constraints also exist in governments, where there are often dependencies on foreign donors and partners. Policy planning challenges are often compounded by conflicting and duplicative planning, and poor performance of government departments in energy planning and data gathering. African policymakers are not commissioning research to guide decisions resulting in static planning without acknowledging new information and research.

Many African countries do not have a published energy plan focused on their economy, and as mentioned, when work is commissioned, it is often once off research (paid for by foreign donors) using consultancies. This detracts from building local capacity and often results in black box outputs difficult to build on. Although local governments are often supportive of these exercises, once-off plans conducted by international consultancies are often not accepted, can erode trust, and risk corrupt influence.

## Donors and financiers also have their own challenges

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Whilst donor support has been incredibly important, it must be acknowledged that the donor community can be prescriptive and can impose burdensome requirements, stifling African innovation. As such, without local context donors can commission work with limited utility. Funding is often insufficient, locking in poor work, that people are reluctant to redo. Donors support short-term once off capacity building programmes and projects without considering the need to embed long-term capacity processes in institutions. Similarly, international support is often focussed on building government capacity and not the capacity of the whole ecosystem.

## In summary

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The above is confirmed by literature on the challenge of energy planning and implementation in Africa. **Both theoretical and survey-based research consistently identify a set of challenges to energy planning and locate capacity as the primary need.** There are no quick wins in building capacity - we need long term processes that build institutional stability and skills.

Our experience, confirmed by our review of other studies, show that the predominant challenges to energy planning across Africa include:

- Studies lack local socio-economic, development and political economy context. Greater effort needs to be made to include local experts, insight, and context in energy planning.
- African countries often lack capacity, resources, and data. Without genuine long-term and persistent capacity building efforts this is unlikely to change. There needs to be donor, industry, and philanthropic support for longer-term funding that allows local entities the freedom and space to invest in skills, relationships, models, and data.
- Data and assumptions often don't reflect local markets and limit African growth. A concerted effort is needed to adapt existing tools and build tools and data for local scale planning.
- There is a lack of coordination of existing donor efforts. Donor support can be short term and insufficiently focussed on institutional strengthening. Coordinating these efforts into a coherent, combined effort will make a significant difference to the effectiveness of existing programmes.
- Global policy and investment marginalise Africa. Without country level, context specific, detailed energy planning, African countries will not have sufficient political will, enabling environments, and strength of voice to attract the global policy and investment support they need. Inclusive and transparent country level studies coordinated into regional plans are the key to unlocking investment and political will.

# African Energy Futures and African led energy research

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All African countries should have the capabilities, resources, and tools to shape their own energy transitions. Achieving this requires African researchers organised into a continent-wide community actively pursuing this goal. African Energy Futures is created in service of this community. We are committed to transforming Africa's energy planning ecosystem centred on establishing and supporting locally embedded research hubs that drive inclusive, informed, and long-term energy decision making – on African terms.

Our approach is to set up, fund and provide technical assistance to hubs of world-class energy systems research and analysis across Africa. Key to this effort is long-term, flexible funding provided to national energy research hubs – collaborative ecosystems bringing together African think tanks, universities, and policymakers. These hubs will receive long term technical, coordination, and financial support from incubation to independent establishment. This long-term stability will enable institutions to invest in the next generation: supporting training of PhDs, postdocs, and fellows. It will enable strengthened institutions: to develop the tools, modelling infrastructure and resources needed to conduct local studies. The AEF will support hubs in connecting studies to policymakers, fostering critical relationships.

Building inclusive research processes that, overtime, enhance locally appropriate processes, assumptions, models, and data will enable greater accuracy and relevance, and build political buy in. Furthermore, while energy modelling is an important starting point it will

inevitably lead to, as we seek to understand demand better and as we match research outputs to policymaker issues, more multidisciplinary work. AEF hubs will connect and contribute to economic development research and policy.

Finally, a hub ecosystem will facilitate the sharing of information, resources, and capacity. Over time the curated linking of hubs will unlock the African innovation needed to solve Africa's specific challenges. The true benefit will be unlocked through collaborating at scale. The hubs working together can share learnings, tools, data, and strategies, and ultimately strengthen the African voice on energy planning.

We believe this approach is desperately needed. Effective energy planning requires academics, researchers, and policymakers collaborating over years. It requires policymakers and researchers working together to understand nuance and explore scenarios. This cannot be achieved by once off studies and is difficult to implement without first building the capacity of the African research ecosystem. Energy planning is therefore as much a capacity building process as it is a modelling and research process.

We believe that the energy planning and research ecosystem needs to be fixed. Researchers and think tanks need long-term funding that allows institutions to invest in people and modelling infrastructure. Policymakers need trusting relationships with researchers who understand the local political, social, economic, and environmental constraints and opportunities.

While by necessity the bulk of the work must be delivered by the hubs, AEF will provide technical assistance to hubs, drawing on our own skill set and those of our partners. African Energy Futures will support across five core functions to deliver on its ambition of scaling 20+ hubs across Africa that can meaningfully contribute to Africa's energy development.

### The AEF will assist hubs with:

**Coordinating funding:** Existing support is largely focused on short term capacity, ignoring specific needs and longer-term support. The AEF will channel flexible, long-term support to African institutions.

**Building Collaborative Platforms:** AEF will organise a community of working-groups focused on common areas of interest. For example, convening researchers who are working on modelling the energy mix, or those thinking about economic diversification and demand forecasting. Alongside these topic-specific working groups we will convene an annual gathering of hubs and partners to ensure a broader understanding of the development challenge and stakeholder engagement strategies.

**Connecting the partner network:** AEF will curate partner programmes in support of building hub capacity, models, and data. In support of the hub community the AEF will commission flagship research on key topics common to the various hubs.

**Providing mentorship & capacity building:** In addition to AEF direct support, AEF will help connect hubs to international and African institutions that have run robust, participatory processes to accelerate energy development.

**Providing workplace opportunities:** AEF may organize placements at other institutions where members can learn by doing and learn from others.

Critical gaps identified in our and other research are the ability for academic institutions to construct and run inclusive research processes (sometimes because they lack access to policy makers), and academia's ability to communicate in ways attractive to political audiences. The AEF will contribute their expertise, and crowd in other expertise, in designing and running inclusive research processes, and in framing research outputs for political audiences and policymakers.

## The AEF hub strategy

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The primary method of hub establishment will be through an annual call for proposals, with the first call scheduled for December 2025. Any African based research institution (academic or think-tank) will be invited to put in bids for US\$ 1 million over three to five years. These bids will be evaluated by an independent adjudication board. Hubs will be expected to be model based and publish research, train new modellers, collect data, run participatory processes with policymakers and industry, participate in collaborative platforms, and help build the capacity of other and future hubs.

Different countries have different starting points and research capabilities. Some have robust institutions, multiple models, publicly available data, strong economic model linkages, and strong relationships with policymakers. Others are operating in environments with mixed policy signals, low transparency on data, weak economies, and low skills levels within government and academia. It is therefore not possible to meet this variety of needs with one type of support. It is necessary to provide different tiers of support to different countries, based on their maturity. This support should however scale country efforts, enabling them to take advantage of larger and more robust levels of support (from the AEF and from others).

The AEF will therefore help incubate potential hubs from informal partnerships in a country, to a smaller hub, to a fully funded hub. Increasing the level of technical and financial support as hubs develop. All informal and unfunded hubs will be invited to participate in community events, rapidly building a critical mass of African researchers working on energy issues.

A critical function of the AEF is to therefore raise funding in support of more and more hubs at various stages of development and engagement. We anticipate establishing three to five hubs by the end of 2026 and 20+ hubs, training over 400 people, over 10 years.

**Three tiers of hub support, serviced by ring-fenced amounts, will be created.**

Candidate hubs are informal groups of academia, think-tanks and policymakers who do not have the scale to form a formal hub. They may not have dedicated modellers or even access to a model. Candidate hubs will receive smaller grant support (< US\$ 300k) and technical assistance to address a specific policy question. The specific project they would run should enable them to build models, data, and relationship infrastructure that puts them on the path to a more formal collaboration.

Medium sized hubs are more formal groupings who may not have the institutional capability to absorb a full US\$ 1 million grant. These hubs may have a narrower energy modelling and policymaking objective or may not have access to some of the broader economy wide modelling infrastructure needed to address key policy questions. The 2-year experience of these hubs should however identify a clear pathway for what is needed to establish a full hub.

Fully funded hubs are formal groups of interdisciplinary academics who will deliver on the full responsibilities of a hub. In addition to receiving technical and financial support from the AEF, these hubs will be expected to help deliver on the objectives of the AEF (train students, influence policy, build modelling and data infrastructure, and publish research) and to help lead the overall hub community.

### Specific note on 3<sup>rd</sup> December call for proposals

The call for proposals announced on the 3<sup>rd</sup> of December is for a fully funded hub. The concept notes submitted, however, will inform where there is further need for and potential for informal, candidate, and smaller hubs. Submitted concept notes will therefore influence the AEF strategy and approach to the donor and partner community for further support.

# How to get involved in AEF

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There are several ways to engage with the AEF community



## Research Institutions

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**Register your intent to host a hub on our website.**

Prospective hosts must be interested in leading multi-disciplinary projects with inclusive research practices. AEF will support hub hosts to lead long-term modelling capability in their countries.

Hubs will be expected to help develop an African wide community of researchers engaged in energy planning and development.



## Partner Programmes

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**Start a discussion to help AEF scale its support.**

If you think there is an opportunity to partner with us, we would love to hear from you.

If you are a university or research institution with experience in energy or economic modelling and would like to act as a mentor or collaborator with an African hub, please let us know.



## Policymakers

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**Support a local hub in your country.**

If you are involved with or leading energy planning processes in your country and would like robust, contextually aware modelling support, please contact us.



## Donors

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**Collaborate with AEF on energy modelling and capacity building.**

If you are a donor or philanthropist and would like to support the AEF, support could be through:

- Supporting policy specific research projects in hubs.
- Supporting one or more small or large hubs.
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# Key literature on African energy planning and capacity that informed this document

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- Tesfamichael and Fuchs, 2024. Navigating complexity: integrating political realities into energy system modelling for effective policy in Sub-Saharan Africa. *Prog. Energy* 6 043001. <https://iopscience.iop.org/article/10.1088/2516-1083/ad5cbf>

## Contact Us

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If you have any questions, would like to enquire about establishing a hub, or would like more information, please reach out to [info@africanenergyfutures.org](mailto:info@africanenergyfutures.org). You can also follow us on social media or get more information on our website: [www.africanenergyfutures.org](http://www.africanenergyfutures.org).

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