

# The Center of Excellence of Productive Use of Energy

## The challenge

Over recent decades, the global expansion in electricity access, including rapid growth in decentralized and renewable systems, has not always delivered the expected human and economic transformation. Millions of households are connected to small systems that provide lighting and basic services. But these are often insufficient to power the tools and appliances needed to create jobs and improve livelihoods. Others have access to grid or mini grid level electricity, but the power is either too costly, lacks reliability or isn't accompanied by investments in tools, market access and training that enable businesses to expand and consume power.

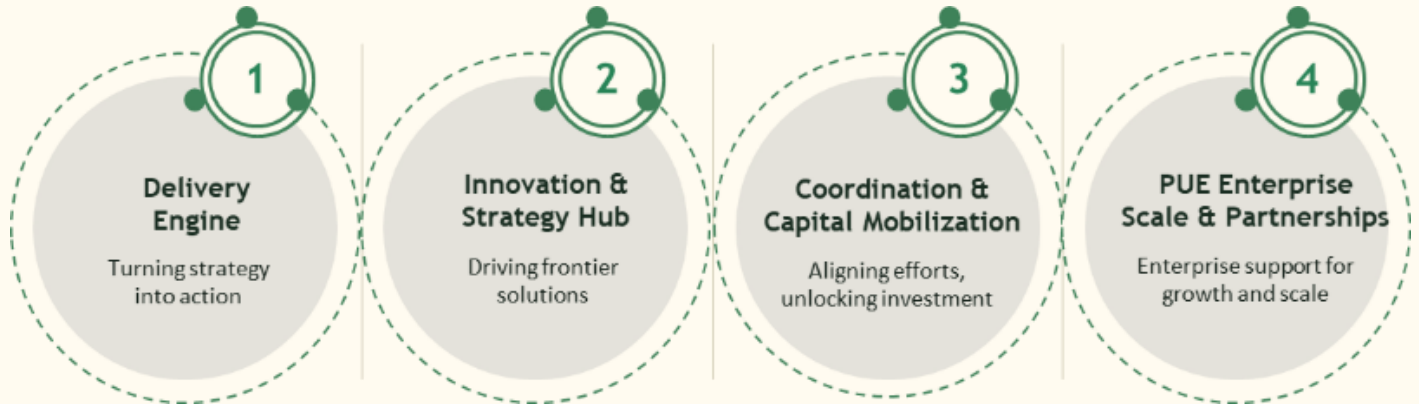
The barriers are structural as much as they are technical. Energy systems are commonly planned to maximize connections at the lowest cost, rather than deliver the reliability, capacity and affordability required for productive use. Compounding this, current initiatives promoting productive use of energy (PUE) remain fragmented and disconnected from sectors such as agriculture, healthcare, small enterprises and education, where energy could most powerfully drive income, jobs and economic resilience.

## Our approach

To address these gaps, **Global Energy Alliance** and the **World Bank** are establishing the **Center of Excellence (CoE) on Productive Use of Energy**. This coordinated platform will accelerate growth in jobs and livelihoods across Mission 300 countries and build the institutional architecture the sector needs to sustain scale. The CoE provides governments, developers, funders, investors and development institutions with coherent, coordinated mechanisms to scale productive uses across grid, mini grid and off-grid contexts and work from a common playbook to deliver scalable results that turn energy access into lasting economic transformation.

*In Nigeria, Helen Obina is using a solar refrigerator from Consistent Energy. Photo: CLASP*





*Illustration showcases coordinated platform, built around four integrated functions.*

## How the Center of Excellence works

The CoE operates through four integrated functions that address critical barriers to scaling PUE.

- **Delivery engine** Embeds cross-institutional PUE advisors within Mission 300 country programs, providing hands-on technical assistance on market development, financing models, appliance deployment and program design.
- **Innovation and strategy hub** Acts as a think tank, developing toolkits and policy frameworks, piloting frontier technologies such as AI-driven demand forecasting and digital marketplaces, and hosting learning platforms that connect policymakers, investors and implementers.
- **Coordination and capital mobilization platform** Aligns programs and funding flows across Global Energy Alliance, the World Bank, donors and NGOs, maintaining shared metrics and accountability frameworks to reduce duplication and accelerate what works.
- **PUE enterprise scale and partnerships function** Supports enterprises to grow and scale in the PUE ecosystem by providing technical assistance and venture-building platforms and deploying catalytic capital to unlock private investment and strategic partnerships.

## What the Center of Excellence will deliver

- **Better-designed national PUE programs** that genuinely reach smallholder farmers, MSMEs and underserved communities with investable, scalable architectures.
- **Open-access knowledge products** best practice playbooks, impact data and policy toolkits available to the entire global development community
- **Strategic engagement platforms** for funders, investors, private sector and government to ensure coordinated funding flows and coherent programming.
- **Market and livelihood linkages** Connecting rural entrepreneurs to finance, value chains and the instruments needed to turn productive demand into durable income.
- **Government and practitioner capacity** Training and embedded advisory support across ministries and task teams in more than 20 countries.

## Where we begin – and where we are going

The CoE will support Mission 300 countries, leveraging new and ongoing national programs. We are beginning in Kenya and Zambia, where strong momentum already

exists. The opportunity is significant: Kenya's 7.5 million smallholder farmers represent a large addressable PUE market. In Zambia, just 54 percent of the population has access to the national grid — and only 34 percent of rural residents — even as Mission 300 targets two million new connections, anchored by the \$200M ASCENT program and the \$100M Zambia Agribusiness and Trade Project (ZATP II). From this foundation, the ambition is to scale across Mission 300 countries over the next 5 years.

## How to get involved

The CoE is anchored in the principle of collaboration. Recognizing the diverse expertise and resources across the sector, the CoE actively welcomes knowledge partnerships, co-creation and the co-financing of initiatives across the four core functions. We are currently developing a flexible partnership framework designed to accommodate varying levels of engagement, ensuring stakeholders across the sector can meaningfully contribute and participate.

## About Global Energy Alliance

Global Energy Alliance for People and Planet builds transformative public, private, philanthropic partnerships to end energy poverty and accelerate green economic opportunity. Founded in 2021, we work to unlock finance, strengthen institutions and transform markets, delivering progress that goes beyond individual projects to drive lasting systems change. Through our two interconnected global pillars, [Grids of the Future](#) – focused on innovation and infrastructure – and [Powering Opportunity](#) – with a focus on jobs and livelihoods – we work toward our vision: a world where everyone has access to affordable, reliable, clean electricity and the means to use it to improve their lives.



*Seamstress Mary Alaele Baelanki at her stall in Wuse Market, Abuja. The market received mini grid electricity in 2024. Photo: TNF Media/ MRI article*

## About the World Bank & ESMAP

The World Bank Group and its Energy Sector Management Assistance Program (ESMAP) help countries accelerate sustainable energy access and translate it into jobs, productivity, and economic growth. Through Mission 300, the CoE ensures expanded electricity access translates into productive, income-generating uses, amplifying Mission 300's impact on economic opportunity and job creation. ESMAP's catalytic funding, technical assistance, and global knowledge, paired with the WBG's operational financing and country engagement, strengthen program design, market development, and implementation

Learn More: [partnerships@energyalliance.org](mailto:partnerships@energyalliance.org)