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Transforming Energy Sectors Globally

GET.transform Workstream: Off-Grid Regulation & Market Development

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german cooperation
DEUTSCHE ZUSAMMENARBEIT

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Contents 1/2

Contents 2/2

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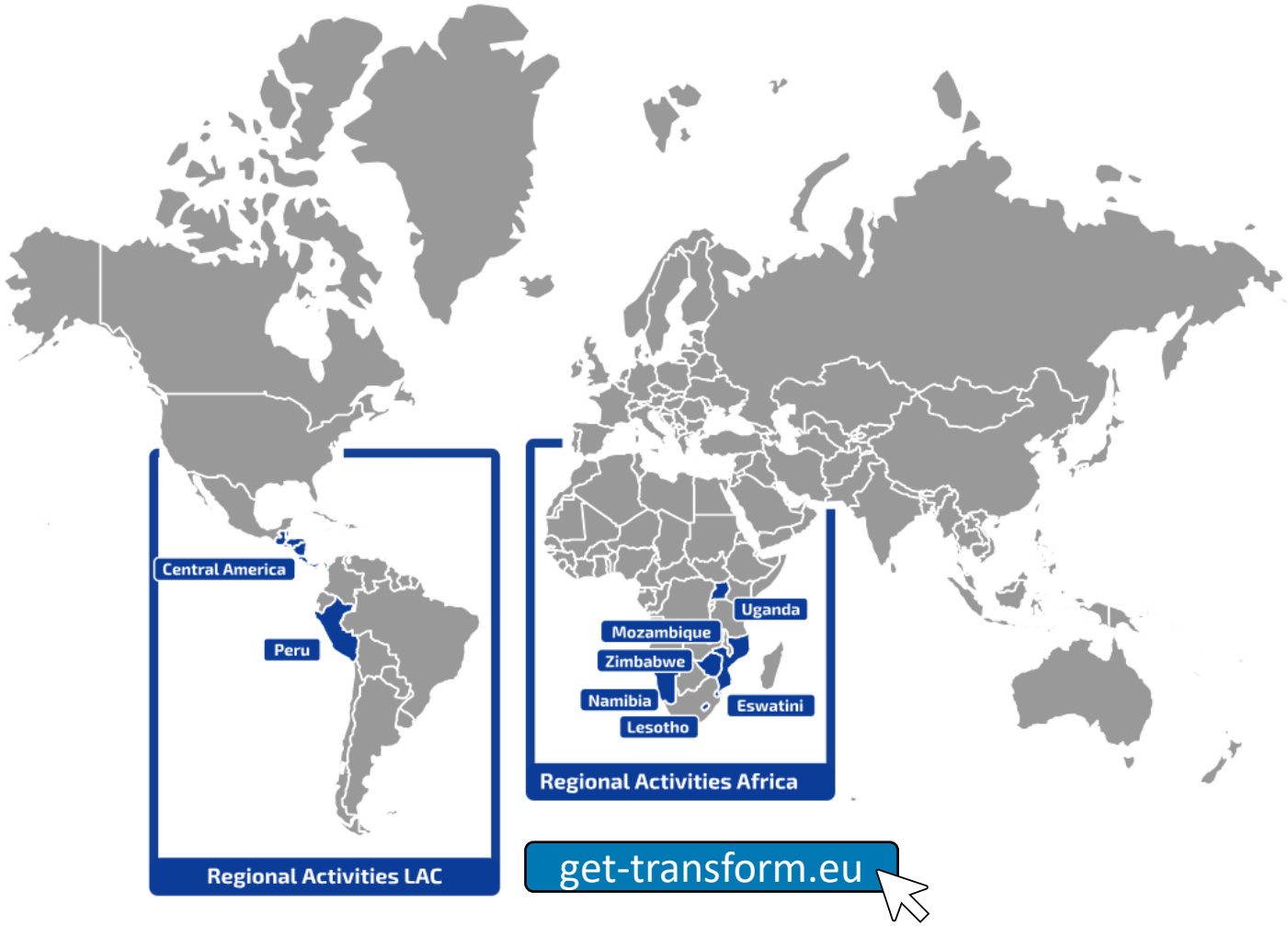
What is GET.transform?

- Technical assistance (TA) and capacity building for the **public sector** to establish conducive policy and investment frameworks for the transition of the energy sector
- Hub of expertise with **> 50 renowned (inter)national energy experts**
- Implementation through **regional** and **country windows** with expert staff on the ground incl. secondments
- **Scaling across countries** through collaboration with regional institutions and other TA initiatives



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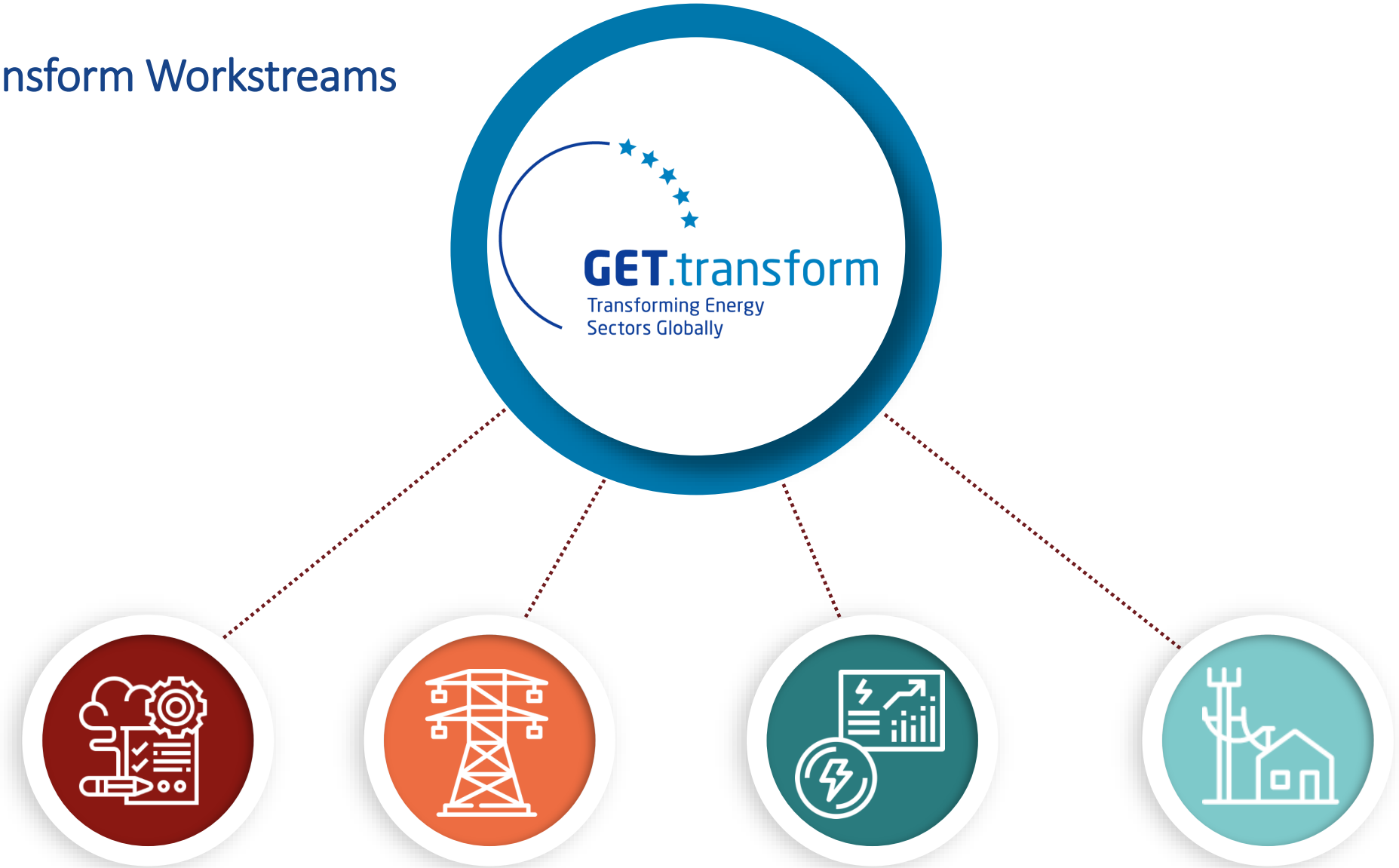
GET.transform Workstreams



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LONG TERM ENERGY PLANNING

Developing integrated energy and power system investment plans, outlining development paths for energy sector transformation

RENEWABLE ENERGY GRID INTEGRATION

Updating of technical power system planning and operational procedures that enable the operation of renewable energy dominated power systems

ON-GRID REGULATION & MARKET DEVELOPMENT

Supporting institutional reforms that allow for new market actors and renewable energy participation: market model design, non-discriminatory grid access, cost-reflective services
Design and management of solicited auctions as well as market-driven mechanisms for procuring on-grid energy

OFF-GRID REGULATION & MARKET DEVELOPMENT

Supporting off-grid electrification planning and data management frameworks

Developing mini-grid regulatory frameworks and technical standards and designing award mechanisms for procuring off-grid energy

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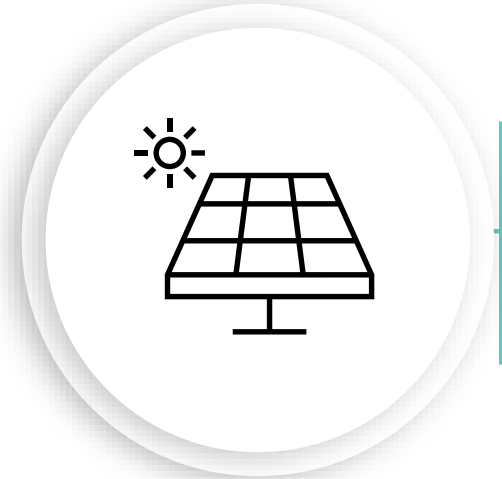
What Space Do Bankable Mini-grid Projects Fill?



Mini-Grid
One system comprised of generation, distribution, metering, and electricity consumption

Isolated Mini-Grids

Interconnected Mini-Grids

- Access to modern energy in unserved (Isolated Mini-grid) and underserved areas (Interconnected Mini-grid)
- At a distance from the grid (too costly to extend) OR embedded in grid covered areas with weak infrastructure (limited or no funds / capacity for grid refurbishment)
- Synergies with Productive Use of Energy (PUE) i.e., both supporting PUE and benefiting from PUE
- Where high demand and market opportunity enable commercial viability

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What is the Market Potential in Africa?

AFRICAN MINI-GRID LANDSCAPE

160,000

Mini-grids needed to reach **universal electricity access** by 2030

$2.6bn

value of **grant, subsidy, and bilateral loans mobilised for mini-grids** by Development Finance Institutions and Development Partners

$ 91bn

Investment required to meet mini-grid targets

9.000

mini-grids planned as at 2021

380m

current **population size** to be connected to mini-grid solutions

20m

energy access **beneficiaries** from planned mini-grids

Sources: AFUR, World Bank Mini Grids for Half a Billion People

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Scaling the Mini-grid Market

- Supporting portfolio and bundled mini-grids
- Integrated electrification planning to identify market potential
- Legal and technical frameworks to support mini-grid uptake
- Scaling regionally through African Model Mini-Grid Regulations – reaching > 14 African regulators
- Harmonised award mechanisms aligned with government, development partners and private sector requirements
- Mobilisation of donor off-grid grant funding
- Unlocking market potential for investors

TARGETED GET.TRANSFORM SUPPORT

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- Reliable data and plans
- Bankable regulatory frameworks
- Commitment/ collaboration/ coordination across stakeholders
- Subsidy mechanisms including long term/ low-cost financing
- Pipeline of viable projects
- Technological innovation for efficiency, reliability, and cost effectiveness

CONDITIONS FOR SCALABILITY

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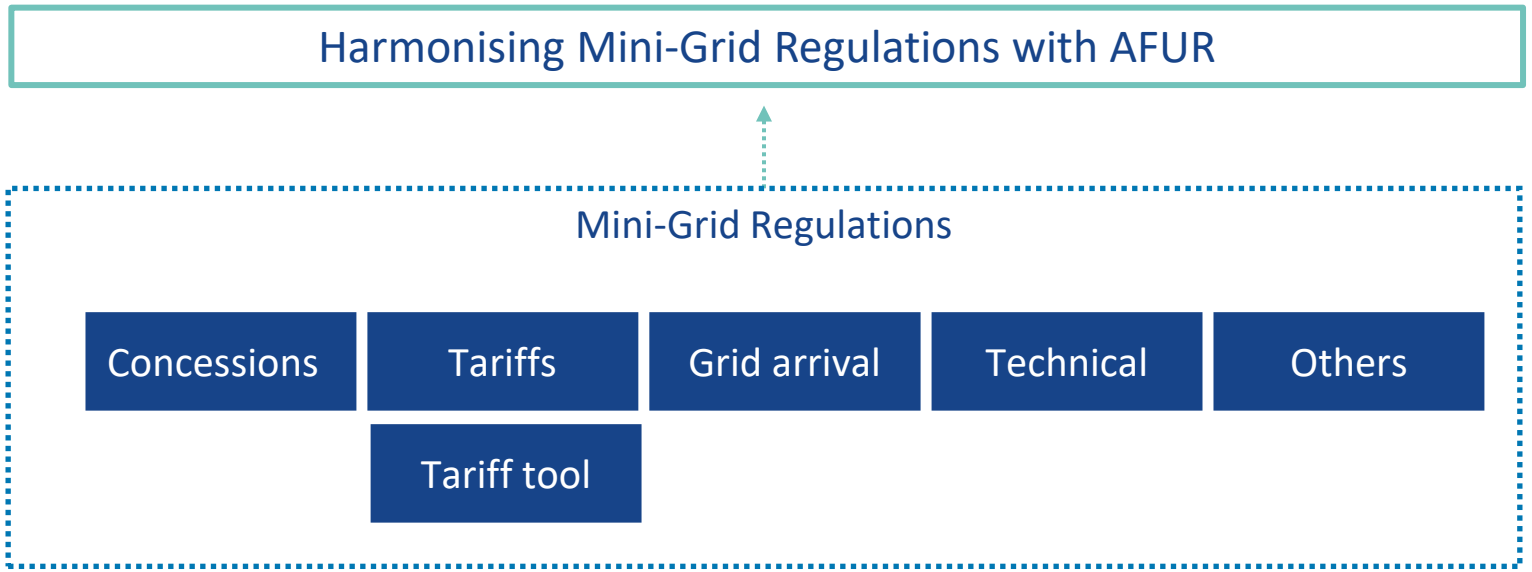
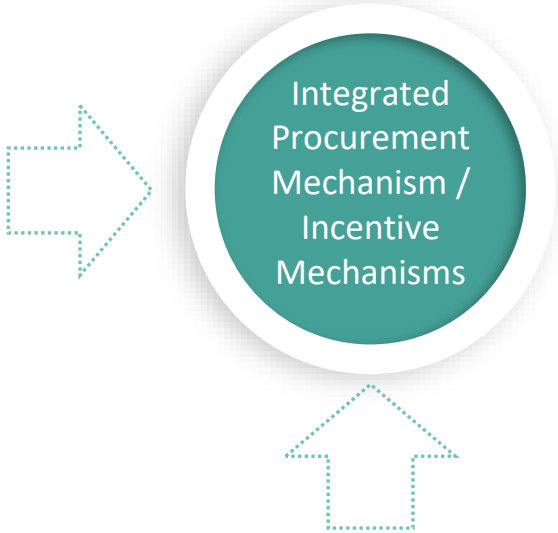
Mini-Grid Market Development Cycle





Funding Windows

Through grants / financial instruments from donors and development financing institutions

Private Sector Pipeline Development

Through targeted financial, legal, business advisory and investor matchmaking services, for instance as provided by the GET.invest Finance Catalyst

Off-Grid Regulation & Market Development – Advisory Services

Off-Grid Regulation & Market Development

Overarching Activities	Capacity Building		
	Knowledge Products		
	Stakeholder Engagement		
	Peer-to-Peer exchanges		
Key Topics	Integrated Electrification Planning (IEP)	Mini-Grid Framework	Public Mini-Grid Incentives
	IEP Diagnostics and Preliminary Analysis	Electricity Act Reviews	Tendering, Evaluation and Awarding of Concessions (incl. Bundled Approach)
	Data Management Frameworks	Mini-Grid Regulations, Guidelines & Templates	Site Selection aligned with IEP
	IEP (incl. data on productive use, social and economic planning objectives)	Tariff Methodology and Tools	Digitalised Platform (bundled mini-grid tenders and subsidy allocation)
	Digitised Project Monitoring and Evaluation	Mini-Grid Technical Standards	Streamlined Tax Incentives and Customs Processes
Key Partners	Energy Ministries, Regulators, Rural Electrification Agencies, Finance Ministries		

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Integrated Electrification Planning

Diagnostics	Data Collection/ Mapping	Least Cost Electrification Plan	Reporting/ Data Transfer	Capacity Building
• Investigating data availability, capacity, methodology • Identifying gaps, guiding planning structure	• Collection, review of quality data on infrastructure, natural resources, socioeconomic activity etc.	• Analysis of data against constraining parameters • Providing a national geospatial electrification roll out plan	• Resulting data with input/output data, electrification model, documentation • Identifying national stakeholders to host database • Sustainability and governance	• Training professional staff on model, methodology, analysis, key variables for maintenance and future updates

UNLOCKING MARKET POTENTIAL

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African Model Mini-Grid Regulations

Mini-Grid Frameworks	
Concessions/Licensing	- Contracts providing exclusive rights to the mini-grid developer. Defining roles, responsibilities, and rights
Tariffs + Tariff tool	- Mini-grid tariffs regulation based on Cost of Service - Flexibility: floating or uniform, minimum subsidy or minimum tariff - Consideration of price elasticity of demand - Clear tariff review process
Grid arrival	- Compensation rules when the grid arrives, developer at the centre - Flexibility to accomodate different constraints and policy choices
Technical	- Light-handed (output based) approach to technical regulation - Tailored requirements based on project size - Consideration of trade-offs between availability, quality, and tariffs
Feeding AFUR work into country activities for furthering regional harmonisation and peer learning	

Forum african des régulateurs des services publics
African Forum for Utility Regulators

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Rolling Out Mini-Grid Incentives

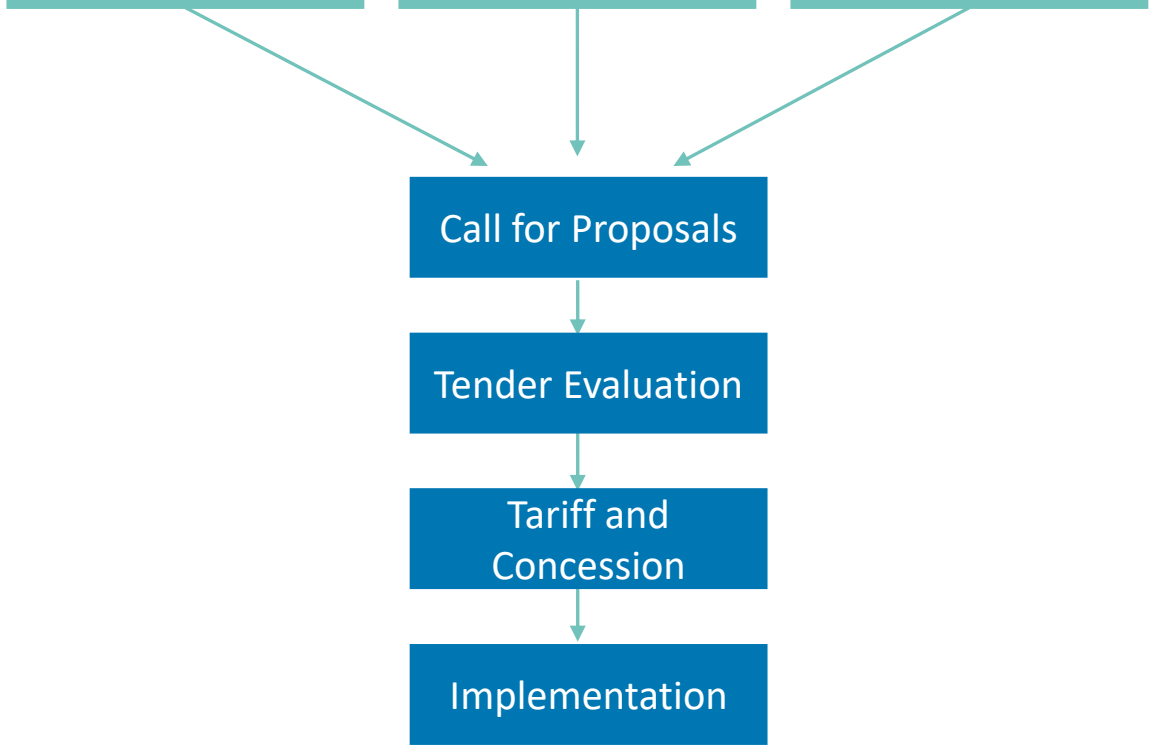
Public Mini-Grid Incentives

Integrated Procurement

Site Selection

Funding

Private Sector Readiness



Tax Incentives and Customs

Import duty, tax, fee exemptions for imported mini-grid components

VAT exemptions for mini-grid components purchased in country and mini-grid electricity sales

Reducing tax on mini-grid corporate profits through reduced taxes, adjusted depreciation periods, tax holidays.

Clarifying and streamlining customs and taxation processes for import / purchase of mini-grid products and mini-grid businesses

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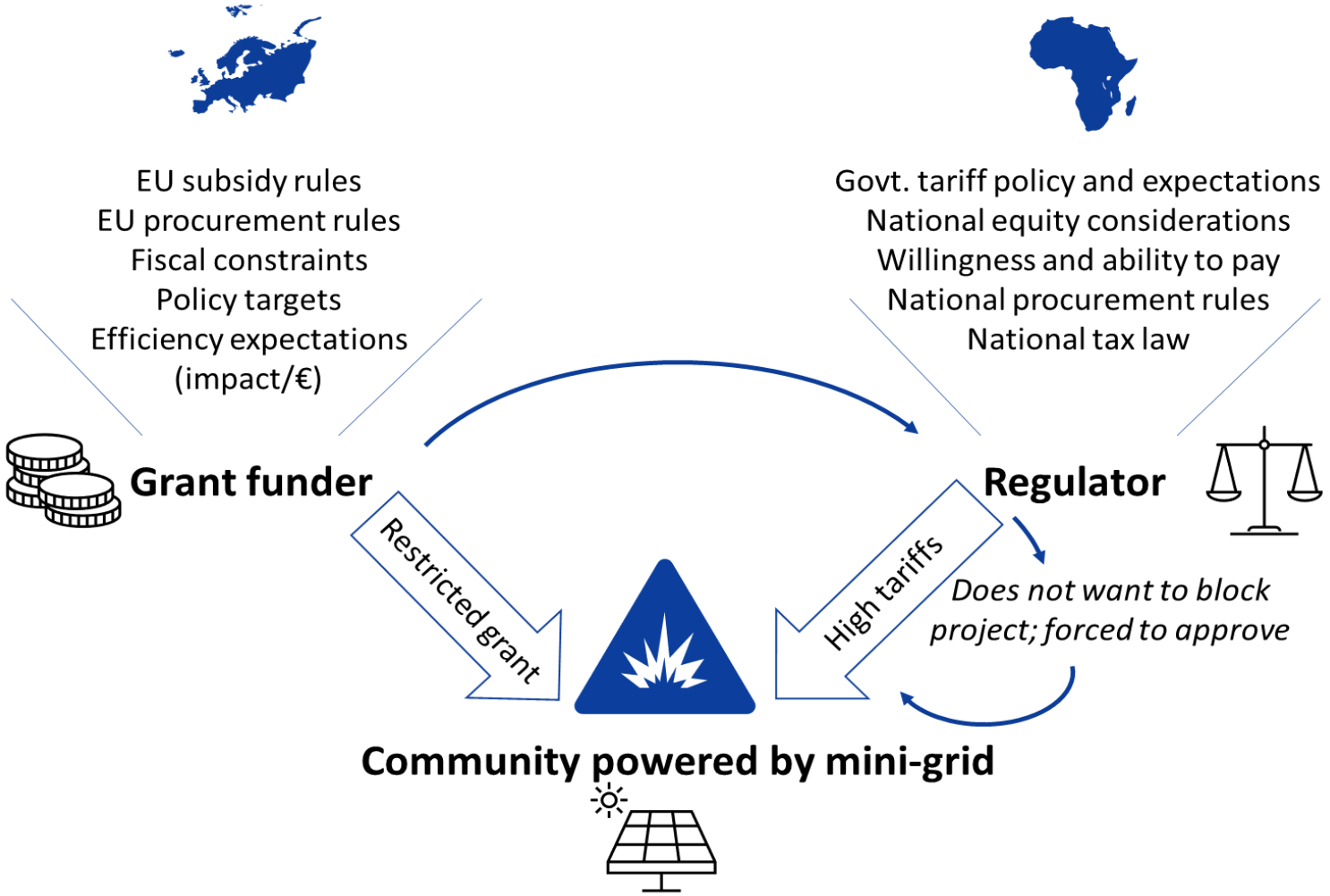
Aligning Regulatory Support with Funding Windows

Conundrum of grant funding vs regulation



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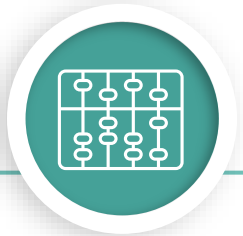
Aligning Regulatory Support with Funding Windows

Opportunity: Harmonising regulatory frameworks and funding mechanisms

Prerequisite: Coordination from early stage

Process



Tariff Framework
Aligning subsidy per connection and grant-fund structure with existing tariff frameworks

Tender Mechanism & Site Allocation
Aligning site allocation & funders procurement with host countries electrification plans. Data management system and auction mechanisms

Licenses and Concessions
Integrating licensing frameworks in auction processes as one-stop shop, including Public Private Partnership model

Benefits: Increased traction, neutral brokering, increased impact / results

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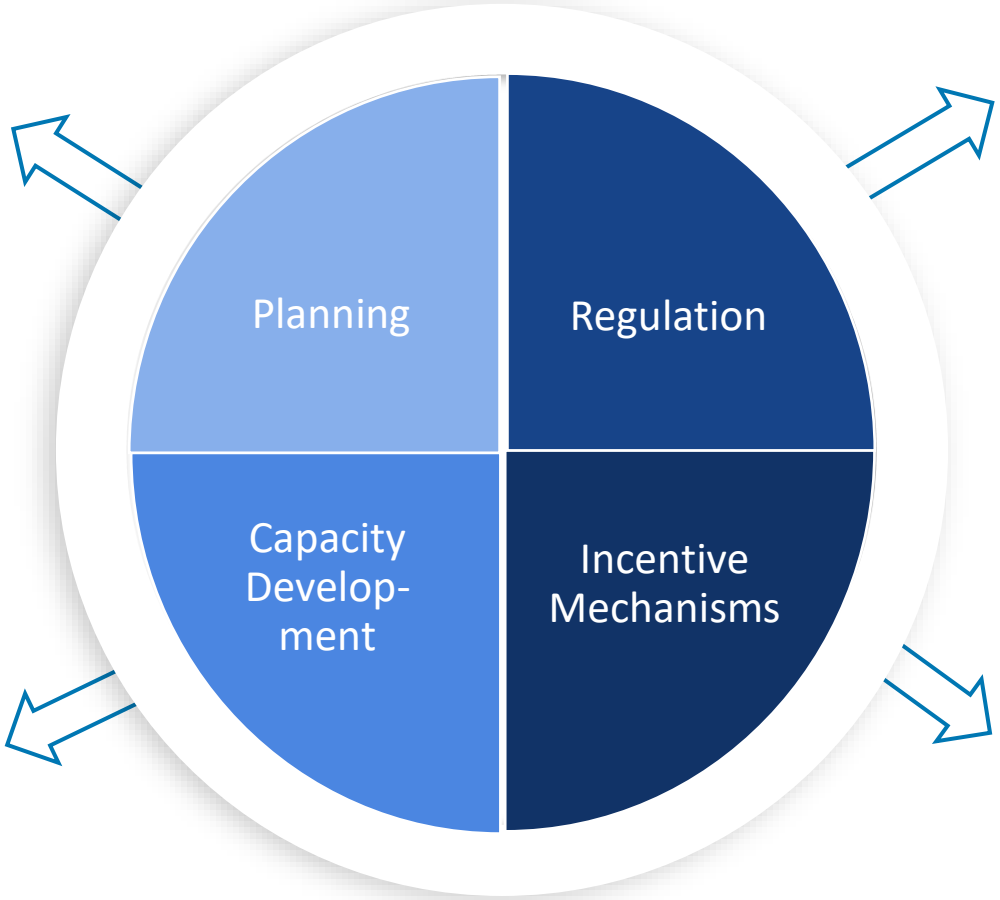
Mainstreaming of Productive Use of Energy (PUE) in the Mini-Grid Market Development Cycle

- Electrification plans informed by data on existing / prospective PUE



- Tariff structures incorporating PUE
- Flexible / adaptable regulations to support innovative business models

- Measuring socio-economic impact
- Knowledge products (business cases, lessons learned)

- Tender mechanisms incorporating PUE in site selection, eligibility, evaluation & monitoring

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Gender Mainstreaming into Mini-Grid Activities

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How Do GET.transform Services Create Impact?

	Integrated electrification plan and data management	Concessions	Tariffs	Grid arrival	Technical regulations	Others (ESIA, land use permit, etc)	Mini-grid Incentives
Issue addressed	Reliability of data and governance On-grid vs off-grid uncertainty Better mini-grid project design	Legal protection Long term security	Cost reflective tariffs Transparent review process Certainty & uniform treatment of projects	Risk of expropriation Long term integration of DRE	Over/under engineering Standardisation of quality of construction and service	Process simplification Lack of clarity	Alignment with regulation and harmonisation of funding approaches Digitised implementation of regulatory framework De-risking investment
Impact	Better visibility for investors Lower risk Greater scale	Lower risk for private sector investment Protection mechanisms for consumers	Provides return on investment Lower risk	Lowers risk of stranded assets Potential distributed generation benefits	Lower cost	Lower cost	Lower cost & risk Greater speed & scale

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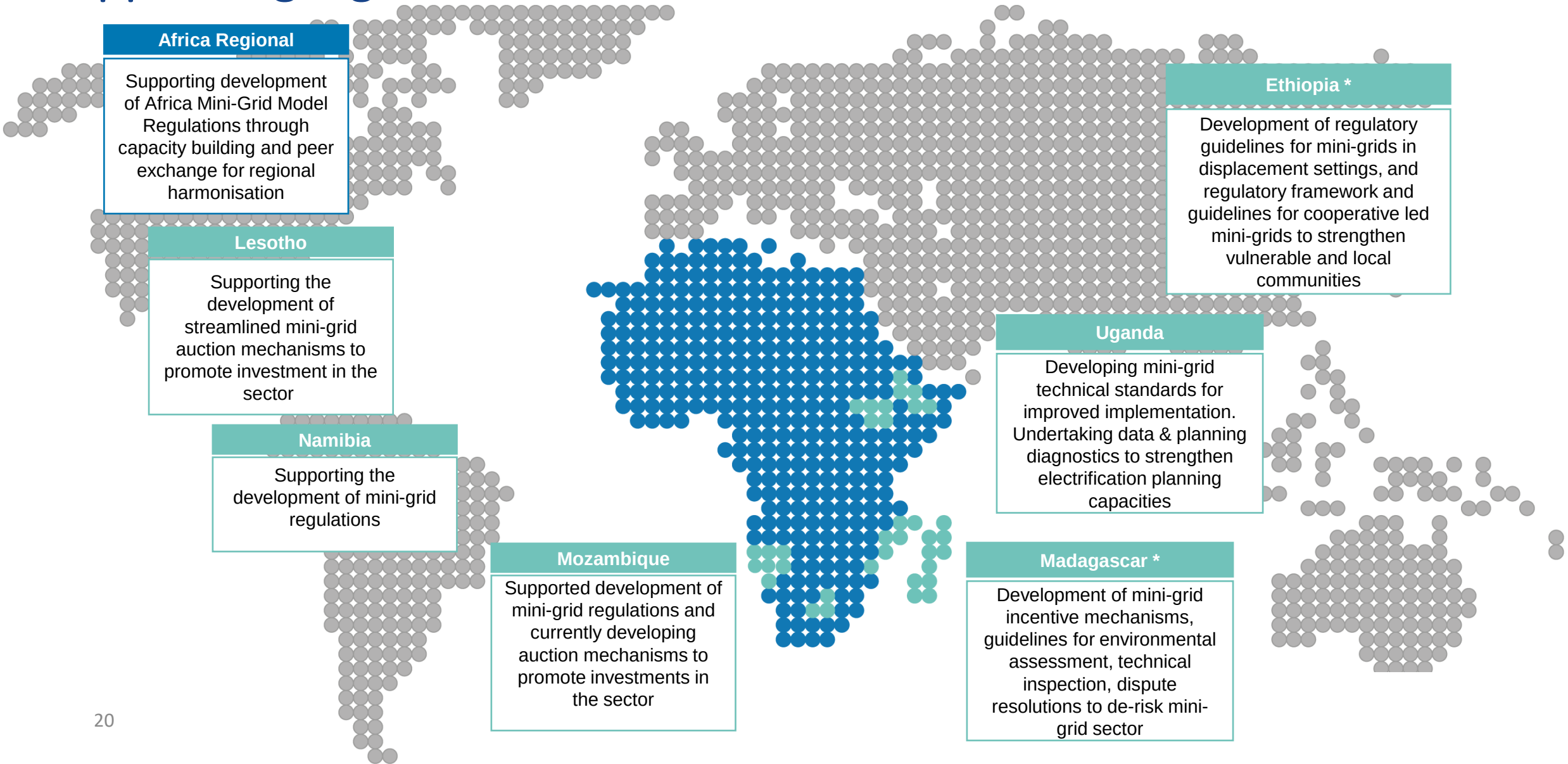
GET.transform Off-Grid Regulation & Market Development
Support Highlights



Africa Regional

Supporting development of Africa Mini-Grid Model Regulations through capacity building and peer exchange for regional harmonisation

Lesotho

Supporting the development of streamlined mini-grid auction mechanisms to promote investment in the sector

Namibia

Supporting the development of mini-grid regulations

Mozambique

Supported development of mini-grid regulations and currently developing auction mechanisms to promote investments in the sector

Ethiopia *

Development of regulatory guidelines for mini-grids in displacement settings, and regulatory framework and guidelines for cooperative led mini-grids to strengthen vulnerable and local communities

Uganda

Developing mini-grid technical standards for improved implementation. Undertaking data & planning diagnostics to strengthen electrification planning capacities

Madagascar *

Development of mini-grid incentive mechanisms, guidelines for environmental assessment, technical inspection, dispute resolutions to de-risk mini-grid sector

Uganda's Energy Data Management Framework

OBJECTIVE

- strengthen its capacity and decision making for improved planning and monitoring of the electricity sector

THE CHALLENGES

- **Limited availability of highly accurate data** on electricity sector due to uncoordinated data sharing amongst stakeholders
- No repository of data to monitor implementation of plans as **electrification planning is not strongly linked to electricity access monitoring**
- **Need for an integrated, coordinated database management system** hosting relevant, reliable data to allow sector tracking and planning

OUR SUPPORT

- Support Uganda's **Ministry of Energy and Mineral Development** (MEMD) through preliminary diagnosis of available data, databases, governance practices and capacities and develop recommendations for an energy database management framework for enhanced planning and monitoring.

EXPECTED RESULTS

- **Detailed action plan on the framework for database management** which can **serve as basis for future electrification planning** to lower risk and promote scale

UPSCALING

- Upscaling through future application of lessons and approach to integrated electrification planning to other countries

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Cost Reflective and Price Elastic Tariffs in Mozambique

OBJECTIVE

Development of harmonised mini-grid frameworks to promote future investments in the sector

THE CHALLENGES

- **Nascent mini-grid sector** with very little experience
- **Need for streamlining mini-grid regulations** with umbrella mini-grid regulation and electricity law
- Need to **build regulator's capacities and knowledge** through sharing of best practices and latest developments in the mini-grid sector particularly with respect to tariff setting

OUR SUPPORT

Support Mozambique's **Autoridade Reguladora de Energia** (ARENE) with **expertise** in development of cost reflective tariff methodology accounting for price elasticity of tariffs for rural households, and capacity building through trainings on usage of tool

https://www.get-transform.eu/tariff-tool-training-for-mini-grid-developers-in-mozambique/

EXPECTED RESULTS

Application of **uniform cost reflective tariffs** allowing for **appropriate return on investments and de-risking** the mini-grid sector for future investments

UPSCALING

Upscaling through peer-exchange at Africa Forum for Utility Regulators

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What GET.transform Can Offer

Trusted international and regional partner institutions

Combination of technical expertise, cultural awareness, local knowledge

Relations to public entities internationally, allowing for facilitation of experience exchange

Long-term staff on the ground, close relationships to partners

In consequence, in-depth knowledge on political situation, context, challenges, cooperation between public bodies

Expertise in organisational development

Partner-centred process with strong ownership, ensuring sustainability of the support

Partnerships & Transformation Experts

REGIONAL

INTERNATIONAL

TRANSFORMATION EXPERTS

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Thank You for Your Attention

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