



Africa Renewable Energy  
Access Program (AFREA)

# **AFRICA RENEWABLE ENERGY ACCESS PROGRAM (AFREA)**



**PROGRAM UPDATE  
PARIS, NOVEMBER 27, 2012**

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# AFREA's objectives



Energy Access

Green Growth

Capacity Building

- AFREA is **ESMAP's** special program for Africa, reflecting an urgent **need to close Africa's access gap**
- AFREA I objective: Meet energy needs and widen access to energy services in an environmentally responsible way (Pillar 1 of CEIF)
- **AFREA I is supported by the Netherlands' \$28.875 million** contribution to the ESMAP Clean Energy Investment Framework Multi-Donor Trust Fund.
- AFREA II under development, with initial pledges of \$12 million and a target of \$50 million over 5 years

# Why do we need a special program for Africa?

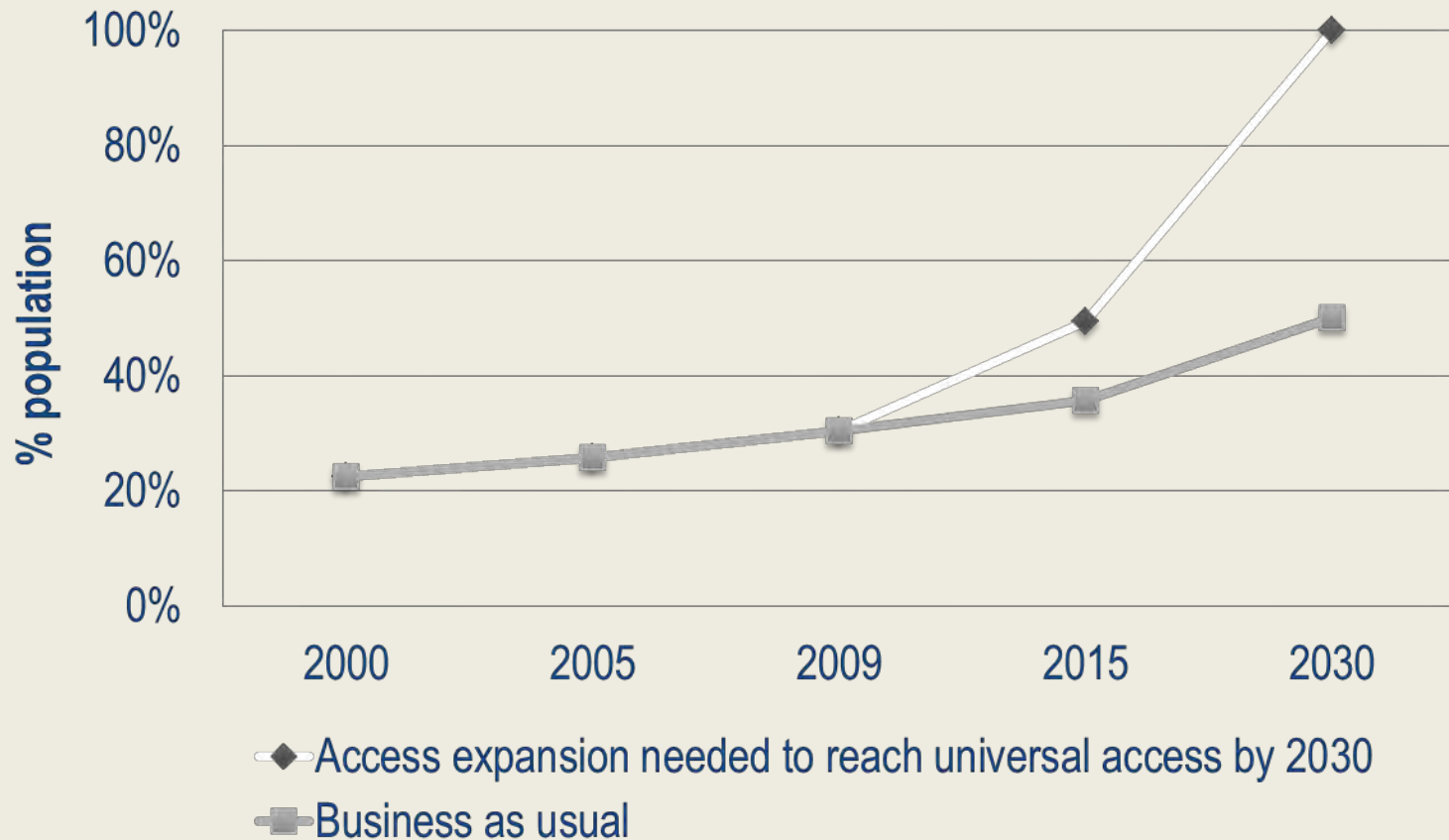


**Table 13.2** ● People without access to electricity by region in the New Policies Scenario (million)

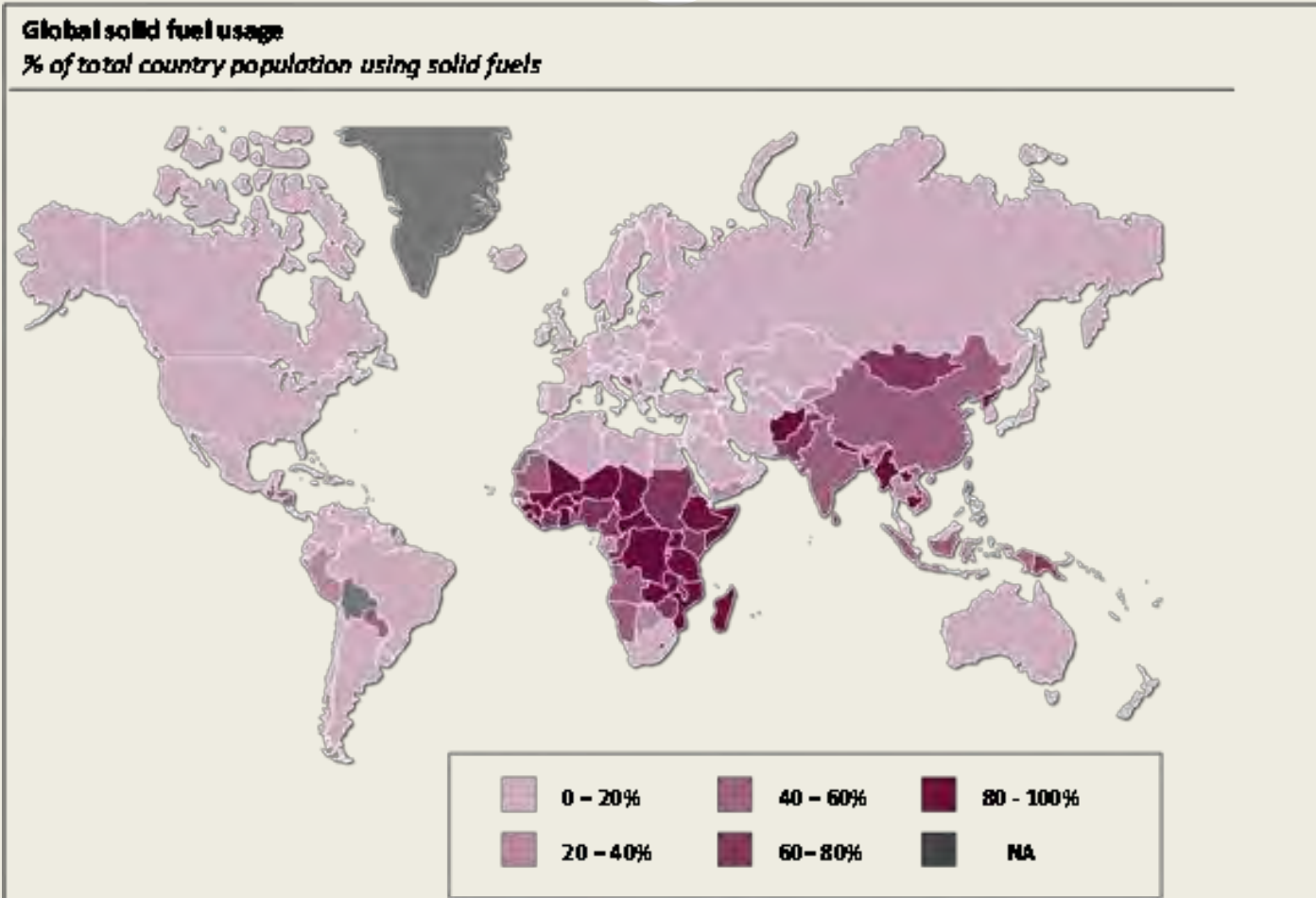
	2009			2030		
	Rural	Urban	Share of population	Rural	Urban	Share of population
Africa	466	121	58%	539	107	42%
Sub-Saharan Africa	465	121	69%	538	107	49%
Developing Asia	595	81	19%	327	49	9%
<i>China</i>	8	0	1%	0	0	0%
<i>India</i>	268	21	25%	145	9	10%
Rest of developing Asia	319	60	36%	181	40	16%
Latin America	26	4	7%	8	2	2%
Middle East	19	2	11%	5	0	2%
<b>Developing countries</b>	<b>1 106</b>	<b>208</b>	<b>25%</b>	<b>879</b>	<b>157</b>	<b>16%</b>
<b>World*</b>	<b>1 109</b>	<b>208</b>	<b>19%</b>	<b>879</b>	<b>157</b>	<b>12%</b>

\*Includes countries in the OECD and Eastern Europe/Eurasia.

# New trajectory is needed to reach universal access by 2030



# SSA is and will remain the most biomass dependent region



# Chronology of events

Event	Date
Submission of Special Proposal (concept note) to Dutch government by ESMAP	July 28, 2008
Signing of Administration Agreement between the World Bank and the Government of the Netherlands	September 22, 2008
Signing of ESMAP Funds Notification (transfer of responsibility of AFREA from ESMAP to AFTEG)	February 3, 2009
Receipt of final tranche of AFREA funds from Dutch government	February 10, 2011
AFREA I: currently all funds allocated, over 90% disbursed or legally committed. Closing date June 30, 2014	Today
AFREA II launched	January 2013

# Type of operations supported



A mix of Bank and Recipient-executed activities

	Recipient executed	Bank executed
Supporting Governments to innovate and scale-up		
Developing sustainable markets for basic energy services		
Filling the knowledge gaps and building capacities		

*Gender and Energy*

# AFREA Bank executed activities



- Lighting Africa (\$2.5 million)
- Energy & Gender (\$1.5 million)
- Energy SWAPs (\$1.5 million)
- Africa Electrification Initiative (\$1.2 million)
- Solar PV for Community Services Toolkit (\$290,000)
- Africa Energy Access Scale-up consultations (\$600,000)
- Biomass Energy Initiative for Africa / Africa Clean Cooking Initiative (\$2.3 million)
- Concentrated Solar Power in South Africa (\$100,000)
- Enhancing Climate Resilience in Nigeria (\$300,000)
- Establishment of Liberia RREA (\$1.46 million)
- Support to ECOWAS Renewable Energy and Energy Efficiency Center (ECREEE) (\$65,000)

**Total: \$12.15 million**



# AFREA Recipient executed activities



- Household Energy and Universal Access Project Mali (\$2 million)
- Lighting Rural Tanzania (\$1 million)
- Catalyzing New Renewable Energy in Rural Liberia– second phase (\$2 million)
- Capacity Upgrading for West African Partners in Renewable Energy Education Program (\$900,000)
- Modernizing Biomass Energy in Benin (\$2 million)
- Rwanda Sustainable Energy Development Project (US\$3.8 million)
- Small innovation grants program to private sector/NGOs - BEIA and LADM (US\$1.5 million)

**Total: US\$ 13.2 million**

# Emerging outcomes I

AFREA supports Governments to innovate and scale-up



- Rwanda and Kenya SWAps completed, mobilized donor resources for access scale-up; Ethiopia underway
- Five AFREA grant agreements signed with the Governments and now being implemented (Benin, Liberia, Mali, Rwanda, Tanzania)
- First results on the ground are emerging and successful approaches are being replicated and mainstreamed – e.g. Tanzania and Liberia

# Rwanda SWAP



- US\$225 million mobilized for first slice of the program (2009-2013) identified in the Investment Prospectus
  - Uses spatial model for least cost planning, including grid and off-grid
  - Sets ambitious target – 6% to 16% in 4 years
  - Commitment to the staged reduction of average connection costs - below \$1,000 in first 2 years
  - On the track to achieve targets

<b>Programme Connections (Target and Actual)</b>	<b>2008 Actual</b>	<b>2009</b>	<b>2010</b>	<b>2011 (August )</b>	<b>2014 Target</b>
• New connections	< 5,000	32,995	43,733	40,419	
• Households connected to electricity	110,896	143,891	187,624	228,043	350,000

# Liberia grant



➤ AFREA helped Government set up the Rural and Renewable Energy Agency

- Difficult institutional environment – post conflict, scarcity of IDA funds
- RREA now fully functional
- First mini-hydro and solar PV projects underway
- Solar PV market development replicated and scaled up with GEF funds: *Lighting Lives in Liberia*



Rehabilitating the micro hydro equipment will help to restore socioeconomic vitality to Yandohun in Liberia.

# Tanzania grant

➤ Tanzania REA uses AFREA to test innovative business models to bring affordable lighting and electricity services to rural areas

- \$1 million competition
- 9 of the 10 sub-projects were successful and expected to scale-up
- At the time of closing, results were:
  - 124,000 beneficiaries from solar lantern systems
  - 2,000 beneficiaries from household connections (mini-grids etc.)
  - 52 public facilities with PV installations
- Innovative business models established and replicated elsewhere
- Lighting Rural Tanzania II implemented with IDA funds



LRT grantee ARTI establishes an innovative sales model relying on traditional credit

# Emerging outcomes II

AFREA is developing sustainable markets for basic energy services



- **Lighting Africa** – over 4 million people with improved lighting in Africa through private sector-driven approach
- **BEIA** - Biomass Energy Initiative for Africa– supported nine local organizations with innovative approaches for sustainable use of biomass
- **ACCES** - Africa Clean Cooking Energy Solutions– supporting enterprise-based model for dissemination of cleaner cookstoves and fuels



# Lighting Africa has expanded



- Over 4 million people with clean modern off-grid lighting facilitated by the joint WB-IFC program
  - Over 100 products tested, 40 passed **Lighting Africa's Minimum Quality Standards**, and are available on the African market
  - Lighting Africa quality standards have gained international acceptance
  - Pilots in Kenya and Ghana, expansion to Tanzania, Ethiopia, DRC, Nigeria, Senegal, Liberia and beyond
  - 3 international off-grid lighting conferences gathering industry, governments, NGOs, donors
  - AFREA/ESMAP main donor for WB activities



# The 3<sup>rd</sup> Lighting Africa Conference Dakar, November 2012





# BEIA pilots yield results



Charcoal production using agriculture waste in Tanzania



Promotion of improved biomass rocket stoves in South Africa



Biodiesel production in Kenya





# initiative has been launched

➤ A **market-transformation** program with the objective to facilitate enterprise-based scale up of clean cooking solutions in Africa

- Build a platform to address barriers to SCALE up of clean cooking solutions, including advanced and improved cookstoves and sustainable fuel supply
- Followed from BEIA, inspired by Lighting Africa
- Starting in Uganda, Senegal and DRC
- In close partnership with the Global Alliance for Clean Cookstoves



Develop an **inclusive framework** to support local and international efforts anchored in **consumer focus, performance, and quality**

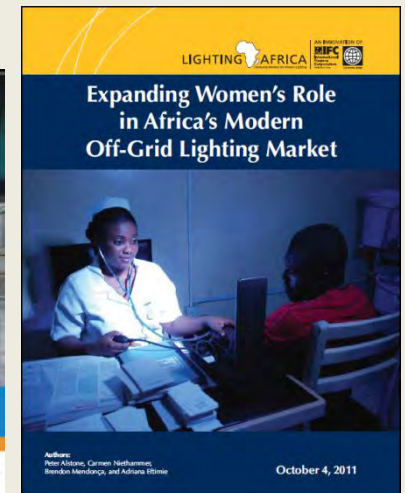
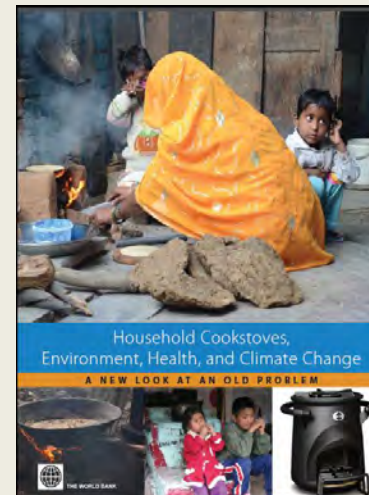
# Emerging outcomes III

## Filling the knowledge gaps and capacity building

- Africa Electrification Initiative has established itself as the leading and the largest network of electrification practitioners in Africa
- Renewable Energy Education Project provided technical assistance to universities in to improve renewable energy curricula and training for renewable energy technicians
- AFREA-supported studies and publications



- PV toolkit for Community Facilities: Guidance for Sustainability
- Wood Based Biomass Energy Development for Sub-Saharan Africa: Issues and Approaches paper
- Potential for Concentrated Solar Power (CSP) in Southern Africa
- Enhancing Climate Resilience of Growth in Nigeria – energy sector
- **Expanding Women's Role in Africa's Modern Off-grid Lighting Market**
- Forthcoming this year: Lighting Africa policy study; AEI publications on small power projects regulatory issues and connection costs; Gender and Energy case studies, toolkit and publication on gender and energy economics..





# AEI Workshop - Dakar 2011

2012 UN Access context

Focusing on the experience of Rural Electrification Agencies and Funds

200 participants from 41 countries, 33 Sub-Saharan African Countries



*"I plan to probe further some of the new least cost technologies being used by other practitioners for possible adaptation in my country."*

*"As high connection charges are a stiff barrier to access in my country, I am planning to immediately introduce measures discussed here at the workshop"*



*"I am planning to scale up PV access to public institutions."*





# Stay Connected - AEI Social Collaborative Network

<http://AfricaElectrificationInitiative.ning.com>

A networking space for SSA electrification practitioners to share knowledge via blog posts and communicate directly with each other on a number of electrification challenges and solutions

217 Members

12 Discussion  
Groups

In English  
and in French

Documents,  
Photos

THE AFRICA  
ELECTRIFICATION  
INITIATIVE

INITIATIVE  
D'ÉLECTRIFICATION  
EN AFRIQUE

Home My Page Members Blog Blog in French Discussion Groups Help Settings

Read ongoing information on ground level electrification issues relating to rural electrification and urban electrification

Blog Posts

Continental Approaches to Electrification

A wide variety of continental approaches have been used in developing countries for both rural and urban.

Discussion

Approches continentales de l'électrification

Une variété de méthodes continentales ont été utilisées dans les pays en développement pour l'électrification rurale et urbaine.

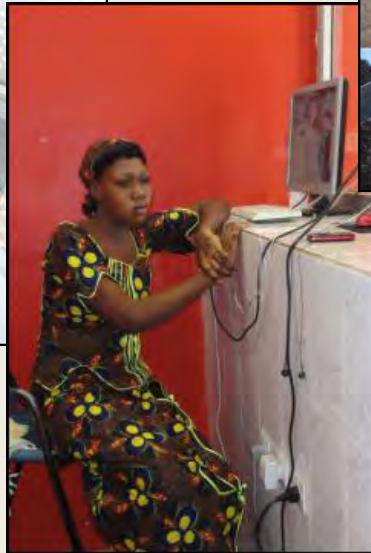
Discussion

Blog Discussions

Photos

# Gender and Energy

## Cross-cutting theme



# AFREA Gender and Energy Program Country & Program Pilots | Action to Date

## Africa Region Country Pilots

- Mali, Tanzania, Kenya, Benin, Senegal
- Systematic Approach of Integrating Gender

Energy  
Project  
Entry Point

Scoping /  
Gender  
Assessment

Gender  
Action Plan

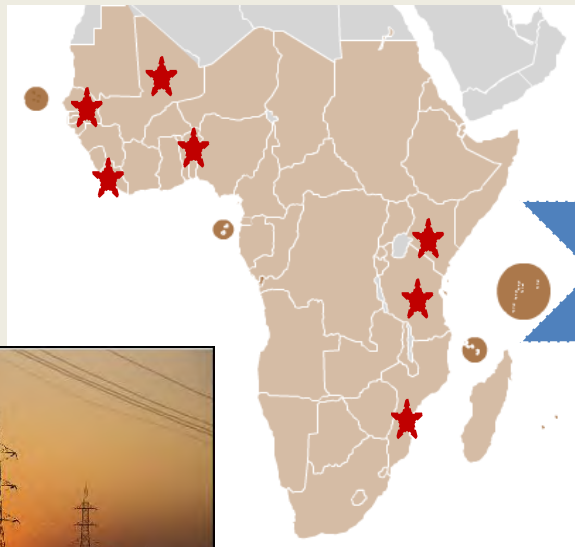
Implementati  
on  
Supervision  
& M&E

## Gender Integrated into Africa Regional Programs

- Lighting Africa
- Africa Electrification Initiative (AEI)
- Biomass Energy Initiative for Africa (BEIA)
- Africa Clean Cooking Energy Solutions (ACCES)

## Knowledge Management

Online Gender and Energy Tools and Resources , Case Studies, Guidance and Analytical Studies (Social and Economic Impacts) forthcoming; Knowledge exchange events



# Highlights of Emerging Results

## Development Lending Influenced

- **Senegal** – Gender part of PDO on PROGEDE II project – “*...to contribute to increase the availability of diversified household fuels in a sustainable and gender equitable way...*”
- **Mali** – Gender Activities part of Additional Financing Project and integrated into upcoming SREP program
- **Tanzania** – Lighting Rural Tanzania project; gender integrated into proposals

## Evidence and “How To” being Generated

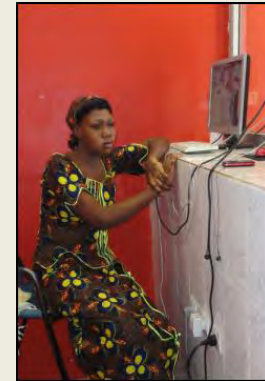
- Approaches being developed based on “learning by doing”
- Clients are engaged and willing and ready to pilot gender integration (
- Household and community level data being collected through gender assessments – gender action plans generated (Mali, Benin, Tanzania)
- Local Partnerships being developed – AMADER and UN Women, Ministry of Women & Children; Global – Energia, NORAD
- Lessons learned from Household Energy and Rural Electrification to be shared across energy sector for potential replication (eg Large Hydro, Renewable Energy, etc)



# AFREA II – Building on AFREA I achievements

➤ AFREA II will deepen and expand the successful AFREA I regional initiatives:

- Gender and Energy
- Africa Electrification Initiative (AEI)
- Lighting Africa expansion
- Africa Clean Cooking Energy Solutions (ACCES)



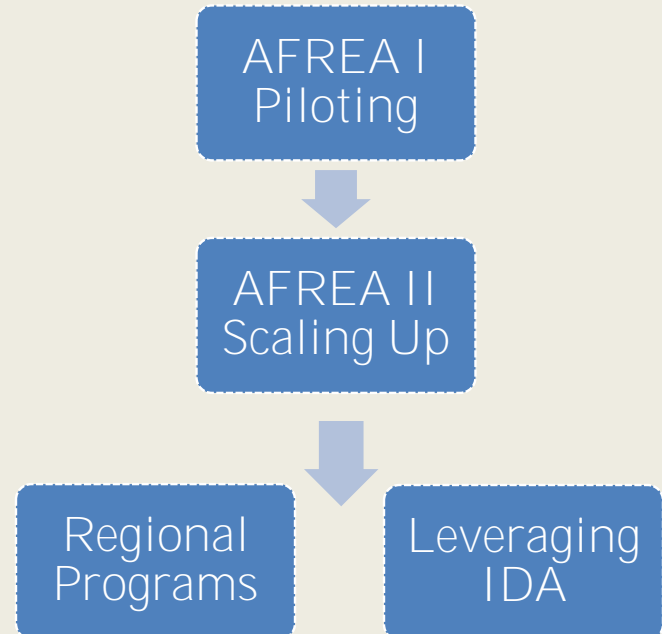
➤ AFREA II will support Governments to innovate and scale up, promote market transformation, generate knowledge and build capacities

# ... but, compared to AFREA I, AFREA II will



➤ move from piloting to scaling up and mainstreaming

- Build a tighter connection to IDA/IBRD lending
- Fewer recipient-executed grants, more TA to integrate scale-up and pro-poor approaches in IDA/IBRD lending
- More attention to policy and institution building
- Cover needs of post-conflict and fragile states
- Expand to all forms of clean energy AND access



# AFREA II: Support the scale up of energy access and clean energy in SSA

**Supporting Investments**

**Improving policy and building institutions**

**Leveraging markets**

**Knowledge and Capacity**

**Theme 1: Enhancing impact – gender and productive uses**

**Theme 2: Supporting post-conflict and fragile states**

# Examples of activities to be supported



## **Supporting Investments:**

TA to integrate innovative and pro-poor approaches to IBRD/IDA operations  
TA for evaluation of clean energy and access interventions  
Sector-Wide Approaches for Energy Access Scale-up  
Low cost electrification options  
Scaling up off-grid electrification solutions

## **Leveraging markets:**

Lighting Africa expansion  
Africa Clean Cooking Access Energy Solutions  
Possibly other regional initiatives – off-grid electricity etc.

## **Policies and institutions:**

Designing and implementing of pro-poor policy and regulatory frameworks  
Improving subsidy design and targeting  
Optimizing renewable energy investments  
Regional integration and cooperation  
Promoting sustainable use of biomass  
Strategies and scenarios for scaling up electricity access in SSA.

## **Knowledge exchange and capacity building:**

Africa Electrification Initiative  
Dissemination  
Capacity building activities

# AFREA II set-up



- ESMAP Program for Africa
- Delegated management to the Africa Region
- Supported by Program Manager, Program Officer and Program Assistant
- Additional to Annual Block Grants and other ESMAP global activities (RE resource mapping, Sustainable **Energy for All...**)
- Multi-year budgets
- Allows both Bank-executed and Recipient-executed activities
- Allocations to be done annually (medium-sized grants) and on a rolling basis (below \$75k) per funding requests presented by TTLs based on Client demands

# AFREA II: Go outside your comfort zone



# AFREA II: Explore new ideas

