



RURAL ELECTRIFICATION AGENCY
ENERGY • EMPOWERMENT • EFFICIENCY



FEDERAL MINISTRY OF POWER

DELIVERING ENERGY ACCESS SOLUTIONS FOR SUSTAINABLE DEVELOPMENT

2023 REA CAPITAL PROJECT IMPLEMENTATION REPORT

TABLE OF CONTENT

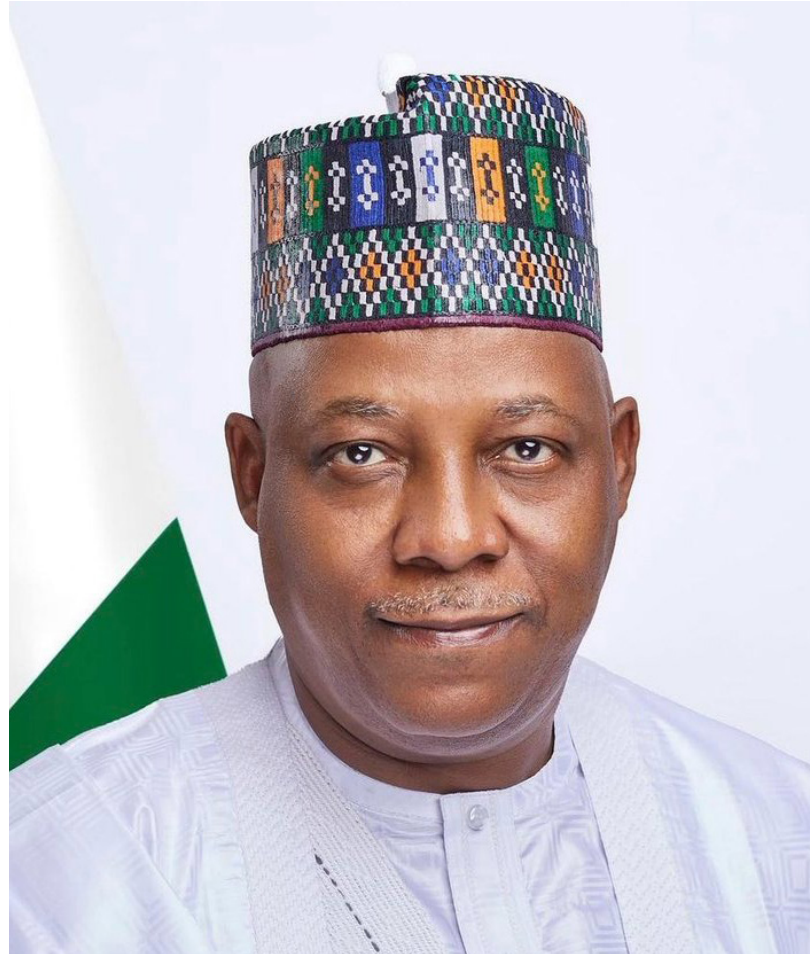
Content	Page		Page
Message from the Honourable Minister of Power	1	Energy Access Technologies for Socioeconomic Development: Impact Touchpoints	19
Message from the MD/CEO	2	Mini Grids	20
Foreward	3	Solar Home Systems	21
Overview of the 2023 Capital Projects Implementation Status	4	Solar Powered Water Pumps	22
Snapshot of Technology Distribution and Impact	5	Solar Street Lights	23
2023 Capital Projects Implementation Status	6	Gender Impact	24
North West	7	Assessing Environmental Impact of Sustainable Energy Access Solutions	25
South South	9	Partnerships	26
North Central	11	2023 Capital Project Connection Snapshot	28
North East	13	Beneficiary Voices	29
South East	15	Lessons Learned and Recommendations	30
South West	17		

Rural Electrification Agency © 2024



Bola Ahmed Tinubu GCFR

President, Commander-in-Chief of the Armed Forces, Federal
Republic of Nigeria



Kashim Shettima GCON

Vice President, Federal Republic of Nigeria



Message from the Honourable Minister of Power

Adelabu Adebayo
(FCA, FCIB.OFR),

Energy is key to sustainable development. In a vibrant nation such as ours, sustainable and reliable energy, when delivered to unserved and underserved communities, catalyzes growth and socioeconomic development. This is why true inclusion cannot be achieved without the alleviation of energy

poverty across our rural communities. At the forefront of the development agenda of President Bola Ahmed Tinubu, GCFR is the transformation of the electricity market.

Witnessing the prompt passage of the 2023 Electricity Act by Mr. President shows that the Federal Government of Nigeria is not oblivious of the global growth path in the electricity sector and immense investment opportunities in the nation's energy landscape. This is evident in the recommendations codified in the 2023 Electricity Act and the multifaceted engagements we continue to lead at the Ministry of power, targeted at closing the gap on energy data, codifying the nation's inclusive national electrification plan, research and development, investment and manpower.

Asides mitigating rural to urban migration and avoiding its resultant effects, alleviating energy poverty in rural communities across the nation helps the country to achieve its full potentials, creating a world where no one is left out. This is why the Rural Electrification Agency (REA), as an implementing Agency, remains a transformative tool for the deployment of sustainable electrification projects across the 6

geopolitical zones.

As we continue to explore and exploit more sustainable energy solutions for the electrification of rural and underserved Nigeria, we continue to expand the impact of Federal Government's budgetary allocations towards rural electrification. This, in essence, will continue to have tremendous impact: homes are being powered; businesses are being energized; schools and primary healthcare centers are being powered; agricultural clusters are being impacted and socioeconomic systems are being strengthened. The Federal Government's commitment to sustainable energy nationwide is a commitment that the Federal Ministry of Power has prioritized and it is all we discuss. This commitment has been further reflected in the recent Implementation Status Report on the 2023 Capital Projects at the REA.

This report is a testament to the hard work, strategic planning, and expertise at the REA through the guidance of the Federal Ministry of Power. However, what should be of critical importance to the public is the Agency's openness and transparency in the delivery of its energy access interventions. From the bidding process to the contract award and project delivery, the REA

has been task to enforce its mandate while ensuring the prompt and quality delivery of the Federal Government's energy access interventions.

The 2023 Capital Projects Implementation Status Report is a reflection of our dedication to transforming Nigeria's power sector while leveraging the Federal Government's allocation to power communities and showcase the remarkable investment opportunities within the shores of this great nation. This report showcases the tangible progress we have made and highlights the impact touch points of our progress in the lives of Nigerians.

As we move forward, I assure you that the Ministry of Power, alongside the REA and other critical stakeholders, will continue to work tirelessly to overcome challenges and harness opportunities in our quest to provide reliable, sustainable, and affordable electricity to all Nigerians.

Together, we are lighting up Nigeria, fostering economic growth, and improving the quality of life for every citizen.

Thank you for your support and commitment to this transformative journey.

God bless the Federal Republic of Nigeria.



Message from the MD/CEO

Abba Aliyu Abubakar,

MD/CEO, Rural Electrification Agency

Every year, the Federal Ministry of Power through the Rural Electrification Agency (REA), continues to expand the reach of off-grid energy infrastructure for the unserved and the underserved nationwide. Through the Capital Budget Appropriation from the Federal Government, the Agency has sustained the impact circle in the delivery of energy access

interventions nationwide.

With the activation of the 2023 Electricity act and the appointment of a new Executive Management team at the REA, the Agency is exploiting a more open approach to project delivery which enables us to measure impact per time, keeping the system accountable and keeping the beneficiaries committed to the Agency's sustained efforts on sustainability.

The 2023 Capital Projects Impact Report is a project delivery report that maps out the progress and achievements of the Agency's electrification interventions through the Capital Project Appropriation for the year 2023. This report therefore highlights the broad-based, inclusive efforts of the Federal Government's energy access efforts vis a vis the sector-specific resources the REA continues to optimize for socio-economic development.

In a bid to optimize the Capital Budget on energy access as implemented by the REA, the Agency has slowly transitioned from the deployment of traditional grid extension projects to a more data-centric and impact-focused technologies targeted at

improving livelihood, strengthening local economies in last-mile communities and aiding demand stimulation through the productive use of energy for agriculture, small and medium scale enterprise, security and social inclusion.

This is why in 2023, working in lockstep with other frontline partners in the public and private sectors as well as community leaders in rural communities, the Agency exploited a mix of the traditional grid extension projects, solar mini-grid systems, solar home systems, solar street lights as well as solar-powered EV charging stations. Through these projects, we have not only illuminated homes, agricultural clusters, schools and businesses, we have also unlocked opportunities in a previously uncharted ecosystem through the delivery of electric vehicle charging systems.

This report outlines the specific outcomes of these initiatives, showcasing the transformative power of sustainable energy. Beyond this, however, the report shows the equitable deployment of energy access infrastructure through the Federal Government's Capital Projects.

Tasked with an important responsibility to drive the mandate of this critical Agency of government, my colleagues and I recognize that sustained progress in energy access ecosystem requires qualitative assessment of technical standards and specifications, accountability, transparency and sustainability. While this report reflects on the past year's implementation of the Agency's Capital Projects, it equally sets forth our plans on open governance, monitoring and evaluation of the impact of budgetary allocations as we continue to collectively address the nation's energy access challenges. Our commitment to transparency and accountability is unwavering, and we will persist in our efforts to ensure that every resource expended delivers measurable benefits to the people of Nigeria.

As we move forward therefore, we remain committed to the optimal delivery of the Agency's mandate. Together, we will continue to drive progress, lighting up more lives and fostering inclusive and sustainable development across our great nation.

Thank You



Foreward

Engr. Umar Abdullahi Umar, FNSE

Executive Director, Technical Services
Rural Electrification Agency (REA)

In delivering the Federal Government's mandate on rural electrification, the Rural Electrification Agency (REA) is doubling down on socioeconomic impact of its interventions across all states of the federation. Through the Capital Projects, we are able to deliver the dividends of impactful governance targeted at development, equity, inclusion and socioeconomic transformation in rural and

underserved communities.

As the new Management of the REA explores novel sustainable models and frameworks through which rural electrification projects can become more sustainable, the Agency is poised to explore broad-based partnerships with critical stakeholders to drive the growth needed in the energy space. The 2023 Electricity Act is futuristic and timely. However, the objectives of the Act can only be met through the facilitation of deliberate actions by all stakeholders, including project developers, original equipment manufacturers, distribution companies, installers as well as active members of the beneficiary communities.

As the Federal Government's implementing Agency, the REA is better positioned to actively drive the quality of transformative change we wish to see in the sector. The Agency's unwavering commitment to meticulous project assessment and sustainability is fundamental to our operations, ensuring that every initiative we undertake is designed to provide lasting benefits and resilience to the communities we serve.

From site selection frameworks to project design and development. From

the quality of infrastructure deployed to community-led sustainability efforts, the new REA management continues to move the needle in its efforts to strengthen the energy access ecosystem in Nigeria, ensuring that our projects not only continue to meet but exceed quality assurance standards and adhere to rigorous specifications.

As the Agency's Technical Services Directorate continues to exploit its broad-based expertise and technical capacity, it is equally leading on quality assurance through project monitoring and evaluation. This is in a bid to assess the impact of the Agency's Capital Projects vis a vis the resources allocated by the Federal Government for same purpose. The 2023 Capital Projects Implementation Status Report is therefore a product of the Agency's open approach to project assessment.

The 2023 Capital Projects Implementation Status Report provides a comprehensive overview of the journey so far in the delivery of multidimensional energy access infrastructure for the year 2023, through the guidance of the Federal Ministry of Power. As we strengthen our monitoring and evaluation

approach, this implementation report highlights our achievements, challenges, and the impactful strides made in extending electricity access for the unserved and the underserved. Most importantly, however, it provides us with real-time access to lessons, pain points, qualitative data and beneficiary feedback. These will continue to serve as a guide in the Agency's decision-making.

As we reflect on the milestones achieved in 2023, we remain steadfast in our commitment to continuous improvement and innovation. We are dedicated to maintaining the highest standards of project implementation, with a focus on sustainability and scalability, to ensure that our interventions have a lasting and transformative impact.

Thank You

Overview of the 2023 Capital Projects Implementation Status

The implementation of the 2023 Capital Projects has so far enabled the Rural Electrification Agency (REA) to exploit a range of energy access solutions targeted at delivering sustainable energy to the unserved and the underserved, while alleviating energy poverty and its resultant effects on socioeconomic growth. In line with the mandate of the REA and development focus of the Federal Government, the Agency has sustained efforts on strengthening key impact touch points in line with the needs and socioeconomic activities across beneficiary communities as selected across the six (6) geopolitical zones.

Drawing from the Agency's Programmatic approach to project delivery, the delivery of the National Poverty Reduction and Growth Strategy (NPRGS) and the traditional objectives of the Agency's Capital Projects, the Technical Services Directorate at the REA has optimized the deployment of multiple

technologies, including Solar Mini-Grids (for high-capacity Productive Use and EV Charging), Solar Water Pumps (irrigation farming), Solar Home Systems (Low-Capacity Productive Use) and Solar Street Lights (for security and community Illumination) across the six geopolitical zones of the country.

Leveraging a data-driven approach to project implementation, the records of completed projects under the 2023 Capital Projects are aiding the alleviation of energy poverty, mitigating some of the baseline conditions and challenges of the beneficiary communities. In the same light, the Agency has reinforced its approach to monitoring and evaluation, an ongoing process which will be sustained till the full delivery of the over the 447 projects in the year under review.

This is in line with the Management's decision on strict adherence to technical standards and specifications on all energy access infrastructure

deployed through the REA. At the REA, our commitment extends beyond merely deploying infrastructure as we continue to align the agency's interventions to the overarching development objectives on the Federal Government of Nigeria. We are therefore keen on tying all energy access solutions exploited to the real needs and unique socioeconomic cultures across all the six (6) geopolitical zones of the nation as we remain dedicated to strengthening the sustainability and quality of the energy solutions being deployed by private sector developers.

In this light, the 2023 Capital Projects is enabling us to deploy a total of 2,631 standalone solar home systems (SHS); 18,670 solar streetlights; 15 solar mini-grids and containerized mini-grids; 1,666 solar-powered irrigation pumps and 106 transformers with a capacity of 37,800KVA. All these projects are being equitably deployed across all the six (6) geopolitical zones. Through rigorous monitoring and evaluation mechanisms, we ensure

that the deployed technologies are not only efficient and reliable but also meet the evolving needs of our beneficiaries. Continuous feedback and assessment allow us to refine our strategies and maintain high standards of performance and durability. Against the backdrop of the Agency's objectives and after due diligence in monitoring and evaluation of project status and use, the projects recorded complete in the year under review are improving socioeconomic development and inclusion, enabling productive use of energy for agriculture, strengthening local commerce, security, gender inclusion, and job creation.

Snapshot of Technology Distribution and Impact

MINI GRID IMPACT



330kWp
Mini-grid size



15
Mini-grids



2,461+
Connections achieved



6 EV
Charging Stations Energized



3
off-grid Communities energized



6
Agro clusters energized



8
Agro-energy productive use recorded.

SOLAR POWERED IRRIGATION PUMP



1,668
solar powered irrigation pumps



200kWp
installed



700+
farm clusters impacted



24,000+
Hectares of farmland irrigated



500+
farmers trained on use of solar irrigation pumps



13,344+
People impacted

SOLAR STREET LIGHTS



18,300+
solar streetlights installed



325
solar streetlights installed in markets/business clusters



369
communities illuminated



500+
KM Covered



445
solar streetlights installed for security in border control posts and army barracks.

SOLAR HOME SYSTEM



2,631
SHS Units Deployed



160kW
Installed



2,561+
Vulnerable households impacted



327
Businesses impacted

GRID EXTENSION PROJECTS



106
Transformers installed and Energized



40MVA
of Transformer Capacity Installed



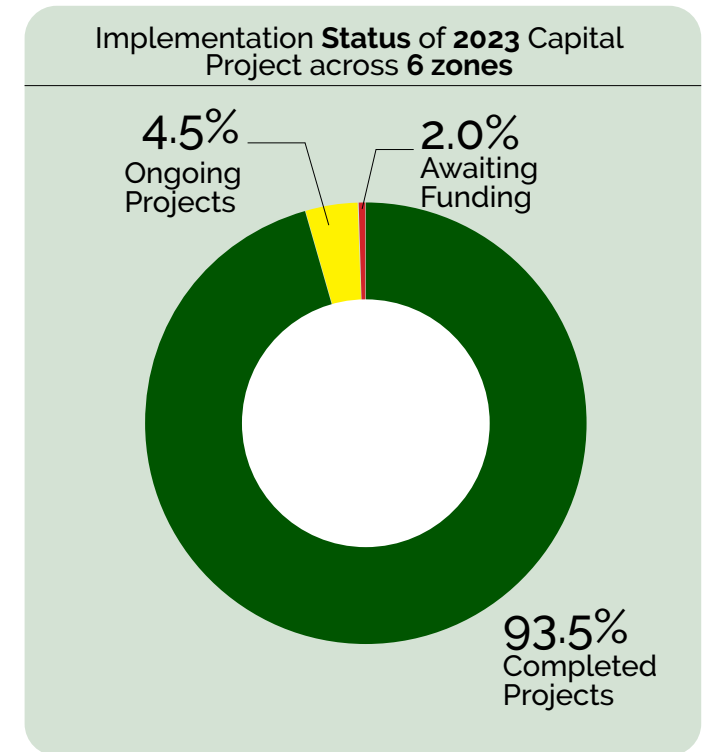
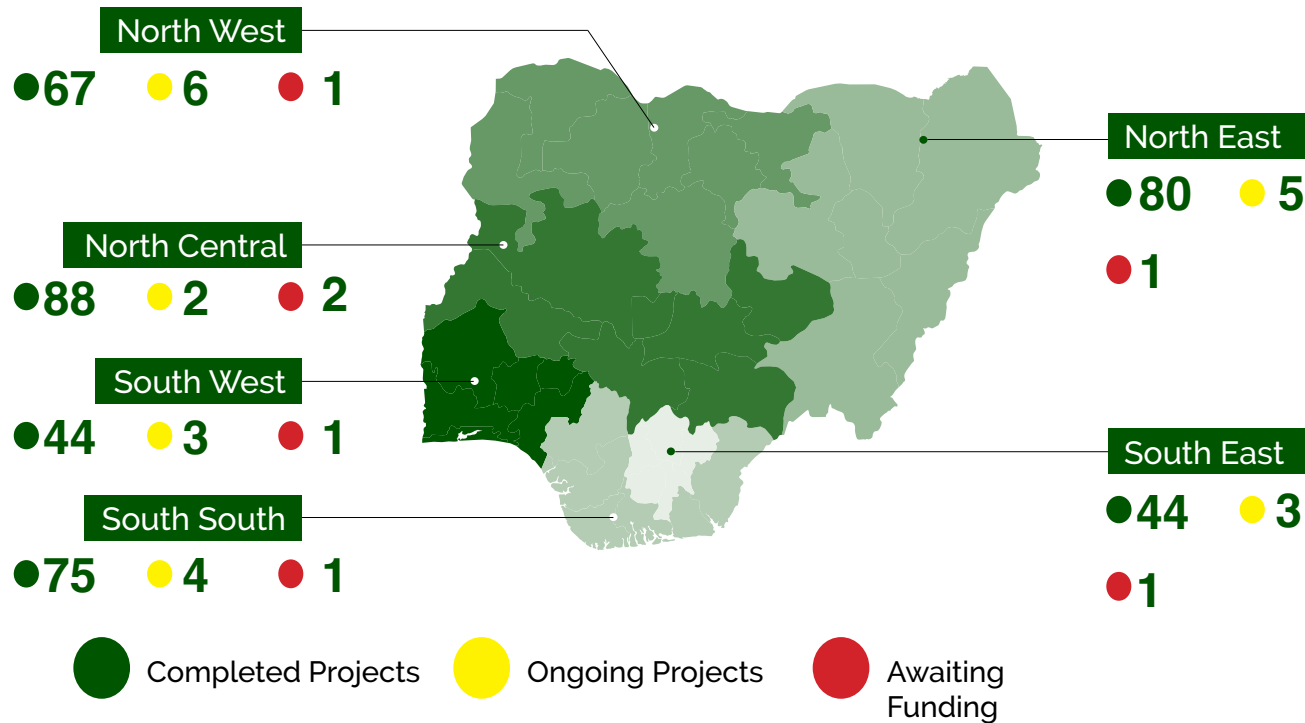
47
Grid Extension projects connected to the national grid



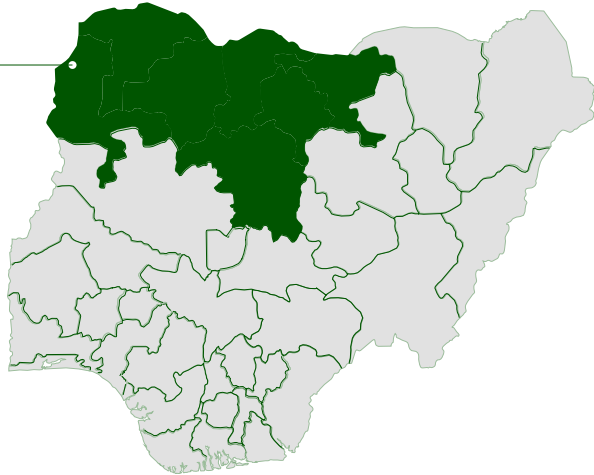
500,000
People impacted

2023 Capital Projects Implementation Status







Optimizing the six (6) zonal offices of the Rural Electrification Agency and in line with the objectives of the 2023 Capital Projects, the Management of the REA is initiating a strict approach to project monitoring and impact assessment while working in lockstep with all relevant stakeholders to accelerate the prompt delivery of Project Lots under the year in review.































North-West



Through the optimization of the 2023 Capital Projects Budget and using a mix of energy access solutions, the Rural Electrification Agency, with supervision from the Technical Services Directorate and the Agency’s zonal offices has sustained the delivery of projects across **all seven (7) North-West States**. These interventions have impacted **261,461 people, including Businesses, farm Clusters, Households, Local Markets and junior/secondary schools**. These interventions have improved security, socio-economic growth, agricultural productivity and inclusion in the North-West.

 15 Grid Extension	 1 Solar Mini Grid
 1 EV Charging Station	 488 Solar Home Systems
 3,219 Solar Streetlights	 278 Solar powered irrigation pumps

Jigawa	Kaduna	Kano	Kebbi	Sokoto	Zamfara	Katsina
 30 Solar Home Systems	 45 Solar Home Systems	 125 Solar Home Systems	 53 Solar Home Systems	 41 Solar Home Systems	 70 Solar Home Systems	 122 Solar Home Systems
 624 Solar Streetlights	 404 Solar Streetlights	 348 Solar Streetlights	 549 Solar Streetlights	 257 Solar Streetlights	 465 Solar Streetlights	 396 Solar Streetlights
 41 solar powered irrigation pumps	 41 solar powered irrigation pumps	 41 solar powered irrigation pumps	 38 solar powered irrigation pumps	 36 solar powered irrigation pumps	 37 solar powered irrigation pumps	 44 solar powered irrigation pumps
 600kVA Transformers Installed	 1600kVA Transformers Installed	 2900kVA Transformers Installed	 600kVA Transformers Installed		 300kVA Transformers Installed	 2000kVA Transformers Installed
		 1 EV Charging Station				

Visual Snapshot - North West



i Use of solar powered irrigation pumps Minanata Sokoto State



i Solar Streetlights installed, illuminating crime-prone areas in Kazaure, Jigawa State



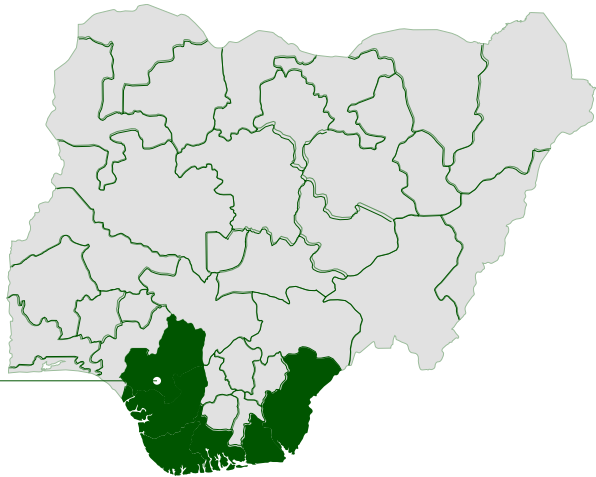
i Delivery of solar-powered water pumps to irrigation famers in Sokoto State



i Transformer installed, serving the residents of Wudil, Kano State

South-South

Through the optimization of the 2023 Capital Projects Budget and using a mix of energy access solutions, the Rural Electrification Agency, with supervision from the Technical Services Directorate and the Agency’s zonal offices has sustained the delivery of energy access projects **across all six (6) South-South States**. These interventions have impacted **184,697 people, including Businesses, farm Clusters, Households, Local Markets and junior/secondary schools**. These interventions have improved security, socio-economic growth, agricultural productivity and inclusion in the South-South.



Akwa Ibom	Bayelsa	Cross River	Delta	Edo	Rivers
76 Solar Home Systems	84 Solar Home Systems	138 Solar Home Systems	25 Solar Home Systems	133 Solar Home Systems	41 Solar Home Systems
105 Solar Streetlights	290 Solar Streetlights	1059 Solar Streetlights	385 Solar Streetlights	1087 Solar Streetlights	115 Solar Streetlights
67 solar powered irrigation pumps	29 solar powered irrigation pumps	86 solar powered irrigation pumps	1 EV Charging Station	1 Oil Press	
600kVA Transformers Installed		300kVA Transformers Installed	42 solar powered irrigation pumps	54 solar powered irrigation pumps	
			500kVA Transformers Installed	800kVA Transformers Installed	

11
Grid Extension

3
Solar Mini Grid

1
EV Charging Station

488
Solar Home Systems

3,253
Solar Streetlights

278
Solar powered irrigation pumps

Visual Snapshot - South South



i Solar-powered Cold Room in Nwabia, Rivers State



i Solar-powered Streetlights powering a community in Iko Ekperem, Rivers State



i Deployment of solar-powered irrigation pumps in Bayelsa State

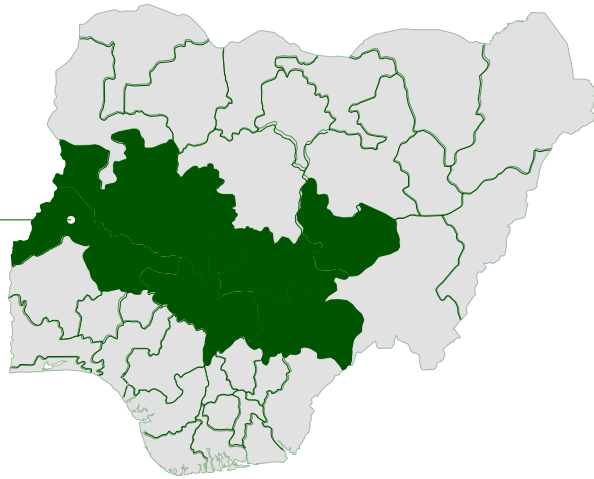


i Solar mini-grid in Ekpoma, Edo State

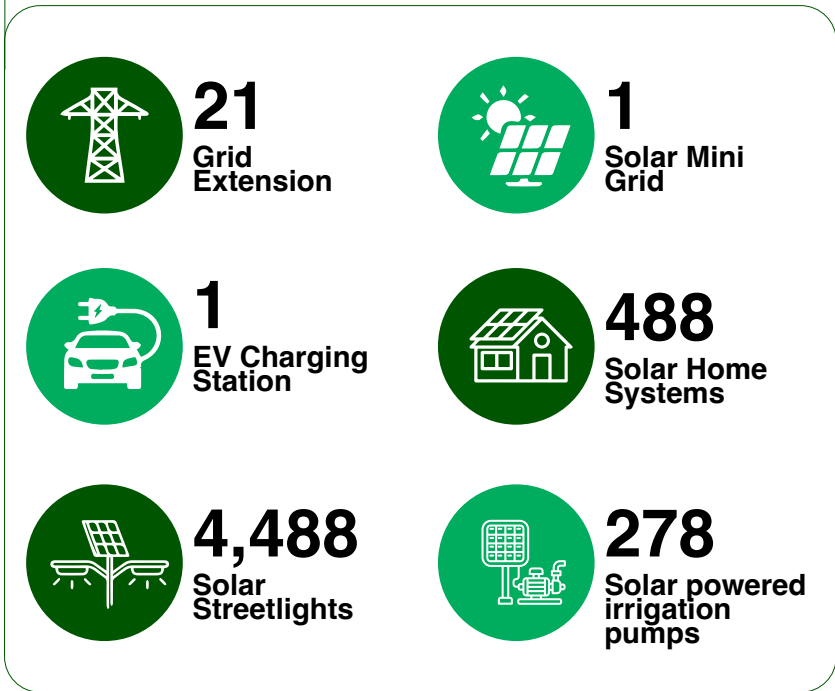


i Solar Home System lighting up a home in Egoro-Amede, Edo State

North-Central



Through the optimization of the 2023 Capital Projects Budget and using a mix of energy access solutions, the Rural Electrification Agency, with supervision from the Technical Services Directorate and the Agency’s zonal offices has sustained the delivery of projects in over **across all seven (7) North-Central States and the Federal Capital Territory**. These interventions have impacted **348,879 people, including Businesses, farm Clusters, Households, Local Markets, Cold Rooms, and junior/secondary schools**. These interventions have improved security, socioeconomic growth, agricultural productivity and inclusion in the North-Central.



FCT	Nasarawa	Niger	Kogi	Plateau	Benue	Kwara
1 EV Charging Station	10 Solar Home Systems	21 Solar Home Systems	104 Solar Home Systems	31 Solar Home Systems	152 Solar Home Systems	129 Solar Home Systems
686 Solar Streetlights	470 Solar Streetlights	365 Solar Streetlights	1743 Solar Streetlights	416 Solar Streetlights	257 Solar Streetlights	724 Solar Streetlights
77 Solar Home Systems	34 Solar powered irrigation pumps	29 Solar powered irrigation pumps	2200kVA Transformers Installed	35 Solar powered irrigation pumps	600kVA Transformers Installed	1100kVA Transformers Installed
35 Solar powered irrigation pumps	300kVA Transformers Installed	3600kVA Transformers Installed	1 Grain Mill	500kVA Transformers Installed	29 Solar powered irrigation pumps	86 Solar powered irrigation pumps
			1 Cold Storage			

Visual Snapshot - North Central



i Installation of Transformers, Okene Kogi State

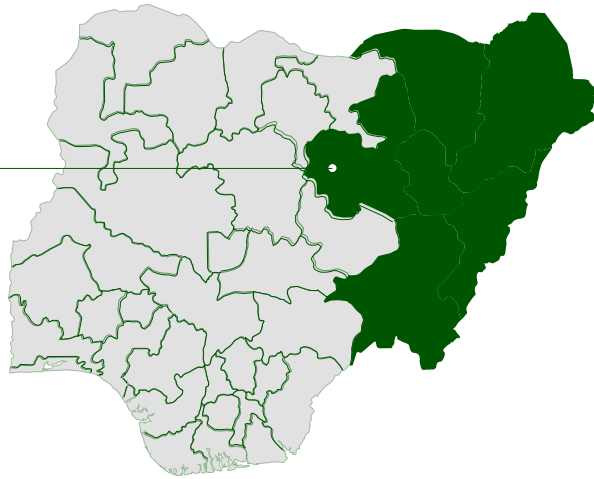


i 300kVA,110.415kVA Transformer Powering Agwara, New Bussa, Borgu LGA, Niger State


































i Distribution lines deployed in Ajewanle, Ilorin, Kwara State

North-East



Through the optimization of the **2023 Capital Projects Budget** and using a mix of energy access solutions, the Rural Electrification Agency, with supervision from the Technical Services Directorate and the Agency’s zonal offices has sustained the delivery of energy projects **across all six (6) North-East States**. These interventions have impacted **291,628 people, including Businesses, farm Clusters, Households, Local Markets and junior/secondary schools**. These interventions have improved security, socio-economic growth, agricultural productivity and inclusion in the North-East.

 19 Grid Extension	 1 Solar Mini Grid
 1 EV Charging Station	 488 Solar Home Systems
 3,399 Solar Streetlights	 278 Solar powered irrigation pumps

Adamawa	Bauchi	Borno	Gombe	Taraba	Yobe
 45 Solar Home Systems	 29 Solar Home Systems	 370 Solar Home Systems	 10 Solar Home Systems	 21 Solar Home Systems	 26 Solar Home Systems
 498 Solar Streetlights	 790 Solar Streetlights	 1600 Solar Streetlights	 271 Solar Streetlights	 156 Solar Streetlights	 477 Solar Streetlights
 63 Solar powered irrigation pumps	 54 Solar powered irrigation pumps	 59 Solar powered irrigation pumps	 900kVA Transformers Installed	 300kVA Transformers Installed	 1800kVA Transformers Installed
 1 EV Charging Station	 3300kVA Transformers Installed	 1 Grain Mill	 30 Solar powered irrigation pumps	 34 Solar powered irrigation pumps	 33 Solar powered irrigation pumps
 1200kVA Transformers Installed					

Visual Snapshot - North East



i Deployment of solar home systems to economically disadvantaged communities, Janga Boza Yobe State



i Installation of 60Watts integrated Solar Streetlights in Mayo Bani, Borno State



i Deployment of standalone solar home systems to women in Jalingo, Taraba State

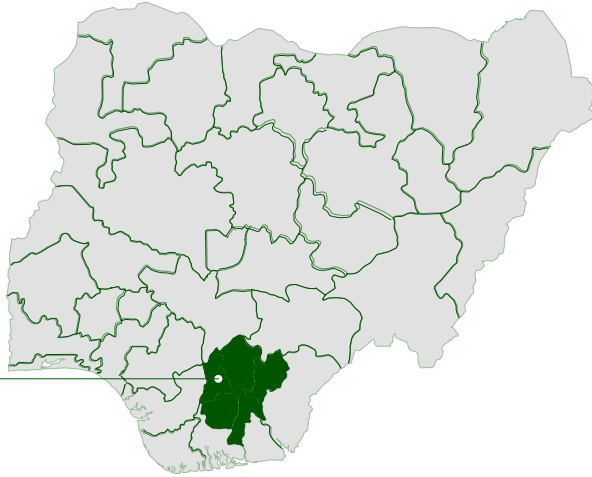


i Installation of 300kVA, 11/0.400kV Transformers, 1km HT Conductor and 2.8km LT Conductor in Yola South LGA, Adamawa State






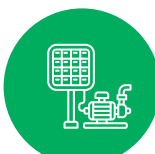





















i 300KVA, 33/0.415kV Transformer and LT Reticulation in Boto, Bauchi State

South-East



Through the optimization of the **2023 Capital Projects Budget** and using a mix of energy access solutions, the Rural Electrification Agency, with supervision from the Technical Services Directorate and the Agency’s zonal offices has sustained the delivery of energy access projects **across all five (5) South-Eastern States**. These interventions have impacted **132,148 people, including Businesses, farm Clusters, Households, Local Markets and junior/secondary schools**. These interventions have improved security, socio-economic growth, agricultural productivity and inclusion in the South-East

 10 Grid Extension	 2 Solar Mini Grid
 1 EV Charging Station	 488 Solar Home Systems
 1,954 Solar Streetlights	 278 Solar powered irrigation pumps

Imo	Anambra	Abia	Enugu	Ebonyi
 1 Cassava Grater Machine	 40 Solar Homes System	 295 Solar Streetlights	 884 Solar Streetlights	 33 Solar Homes System
 62 Solar Homes System	 154 Solar Streetlights	 103 Solar powered irrigation pumps	 1 EV Charging Station	 198 Solar Streetlights
 430 Solar Streetlights	 37 Solar powered irrigation pumps	 600kVA Transformers Installed	 74 Solar powered irrigation pumps	 64 Solar powered irrigation pumps
 800kVA Transformers Installed	 300kVA Transformers Installed		 300kVA Transformers Installed	 300kVA Transformers Installed

Visual Snapshot - South East



i Mini-grid powering Okun Ikeduru, Imo State

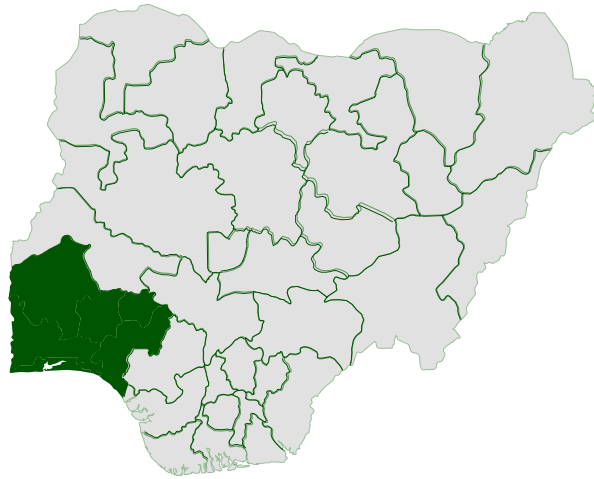


i Installed solar streetlights in Amaigbo community, Imo State

































i 300kVA, 33/0.400kV Transformer deployed in Okigwe Local Government Area, Imo State

South-West



Through the optimization of the **2023 Capital Projects Budget** and using a mix of energy access solutions, the Rural Electrification Agency, with supervision from the Technical Services Directorate and the Agency’s zonal offices has sustained the delivery of energy access projects **across all five (5) South-Western States**. These interventions have impacted **236,297 people, including Businesses, farm Clusters, Households, Local Markets and junior/secondary schools**. These interventions have improved security, socio-economic growth, agricultural productivity and inclusion in the South-West.

 14 Grid Extension	 1 Solar Mini Grid
 1 EV Charging Station	 488 Solar Home Systems
 2,032 Solar Streetlights	 278 Solar powered irrigation pumps

Ekiti	Lagos	Osun	Ondo	Oyo	Ogun
 12 Solar Home Systems	 95 Solar Home Systems	 2 Solar Home Systems	 237 Solar Street Lights	 252 Solar Home Systems	 57 Solar Home Systems
 320 Solar Street Lights	 256 Solar Street Lights	 322 Solar Street Lights	 1 EV Charging Station	 628 Solar Street Lights	 399 Solar Street Lights
 500kVA Transformers Installed	 37 Solar powered irrigation pumps	 103 Solar powered irrigation pumps	 74 Solar powered irrigation pumps	 1 Grain Miller/Cassava Grater	 1100kVA Transformers Installed
	 4000kVA Transformers Installed	 1500kVA Transformers Installed	 300kVA Transformers Installed	 64 Solar powered irrigation pumps	
				 1 EV Charging Station	
				 2100kVA Transformers Installed	

Visual Snapshot - South West



i EV Charging Station in Oyo State



i Transformer installed in, Ekiti State



i Solar streetlights illuminate Idanre road, Ondo State



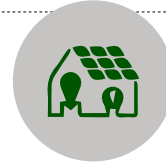
i Deployment of solar powered irrigation pumps in Ogun State



**Energy Access Technologies for
Socioeconomic Development**
Impact Touchpoints

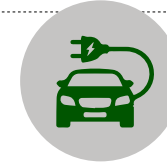
Mini-Grids

The REA has sustained its data-driven approach to the deployment of solar hybrid mini-grids and standalone mini-grids for energy access, social development and economic growth through productive use. In the implementation of the 2023 Capital Projects, over 330kWp capacity of sustainable energy have been deployed through the mini-grid technology.



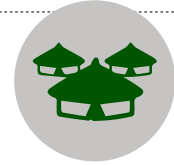
Agro-Processing

120kWp capacity deployed, 20kWp each, across the 6 geopolitical zones, powering productive use appliances such as rice mills, destoners, cold storage, oil pressers, cassava graters, grain mills.



EV Charging Stations

90kWp capacity deployed across the 6 geopolitical zones



Off-grid Community Access

120kWp capacity deployed to energize previously unserved communities.

Impact



Improved energy access for businesses and households.



Improved demand stimulation through productive use.



Food security through energy-efficiency equipment.

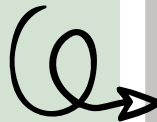


Innovation through the demonstration of EV technologies.



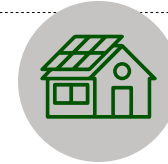
Solar Home Systems

Solar home system (SHS) technologies remains one of the fastest growing renewable energy technologies in the off-grid space. Due to its ease of deployment to hard-to-reach locations and economically-disadvantaged communities, the REA continues to leverage the SHS solution for energy access. 2,631 SHS Units deployed, with a total capacity of 160kWp across all 6 geopolitical zones.



Growth of MSMEs

327 solar home systems deployed for businesses in unserved and underserved communities.



Energizing Households

2561 solar home systems deployed to energize economically-disadvantaged households in last-mile communities.

Impact



Improved livelihood in last-mile communities



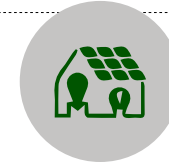
Economic sustainability



Socioeconomic development in last-mile communities

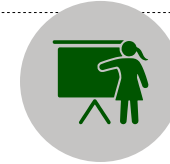
Solar Powered Irrigation Pumps

As part of the REA's ag-energy efforts targeted at improving agricultural productivity and food security in rural areas, it kicked off the deployment of the innovative Solar powered irrigation pumps for irrigation farming. 1,668 solar water pumps have been deployed through the 2023 Capital Projects, with a total installed capacity of 200kWp, impacting over 24,000 hectares of farmland.



Irrigation Farm Clusters

Over **700** farm clusters impacted through the deployment of the innovative solar-powered water pumps.



Training on Innovative Farm Practices

Over **500** farmers trained on productive and energy efficient farming practices.

Impact



Food Security



Agricultural Productivity



Increase in Yield

Solar Streetlights

To sustainably improve security and safety through the illumination of border corridors and crime-prone locations, the REA Capital Projects has enabled the agency to strategically install standalone solar streetlights across the 6 geopolitical zones. Over 18,300 solar streetlights installed, covering a distance of over 500 kilometers.



Indigent Communities

Over **17,000** solar streetlights deployed for illumination and security in indigent communities.



Local Markets

Over **325** solar streetlights installed in markets and business clusters.



Security-Prone Locations

445 solar streetlights installed in key locations, including Custom border control posts and Army Barracks.

Impact



Safety and security of lives and properties

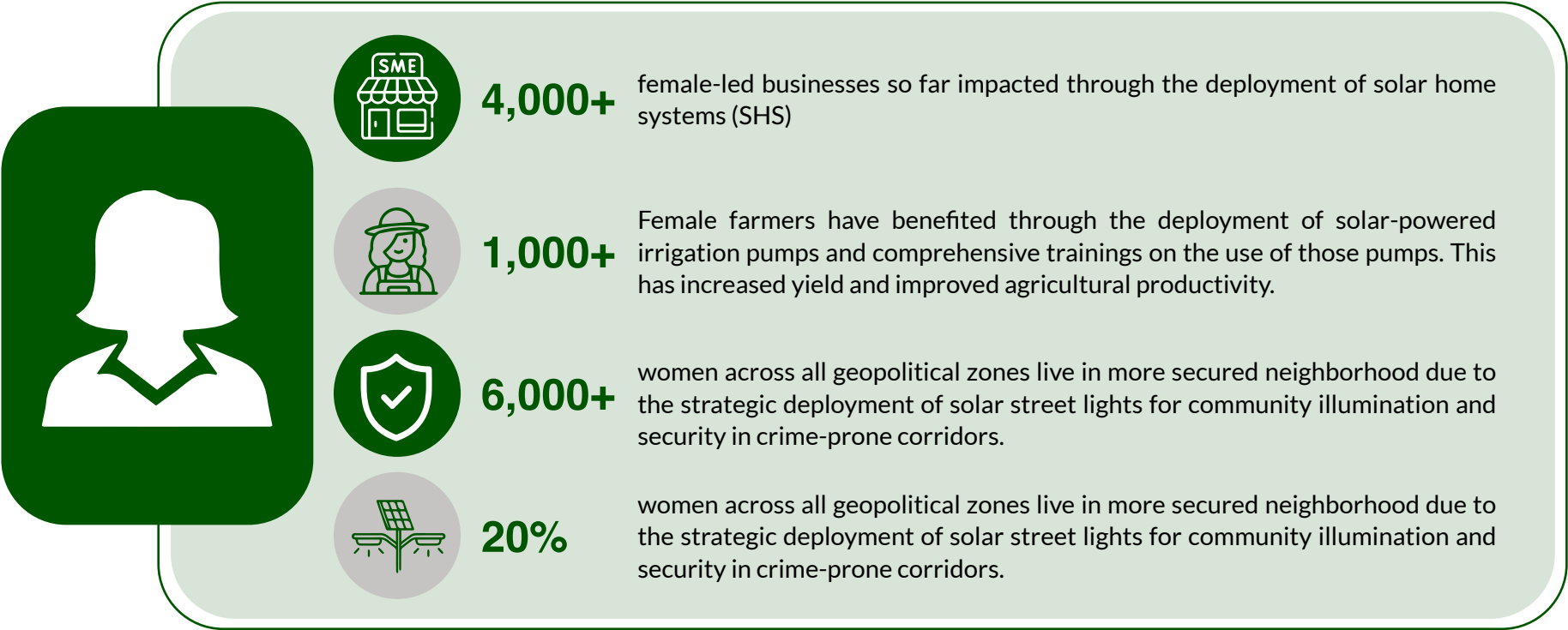


Mitigation of crimes and criminal activities

Gender Impact

In line with the REA's gender mainstreaming and inclusivity efforts, the Agency has sustained deliberate consideration of women in the deployment of off-grid solutions under the Capital Projects for domestic and productive use amongst women

Below is a highlight of these efforts:

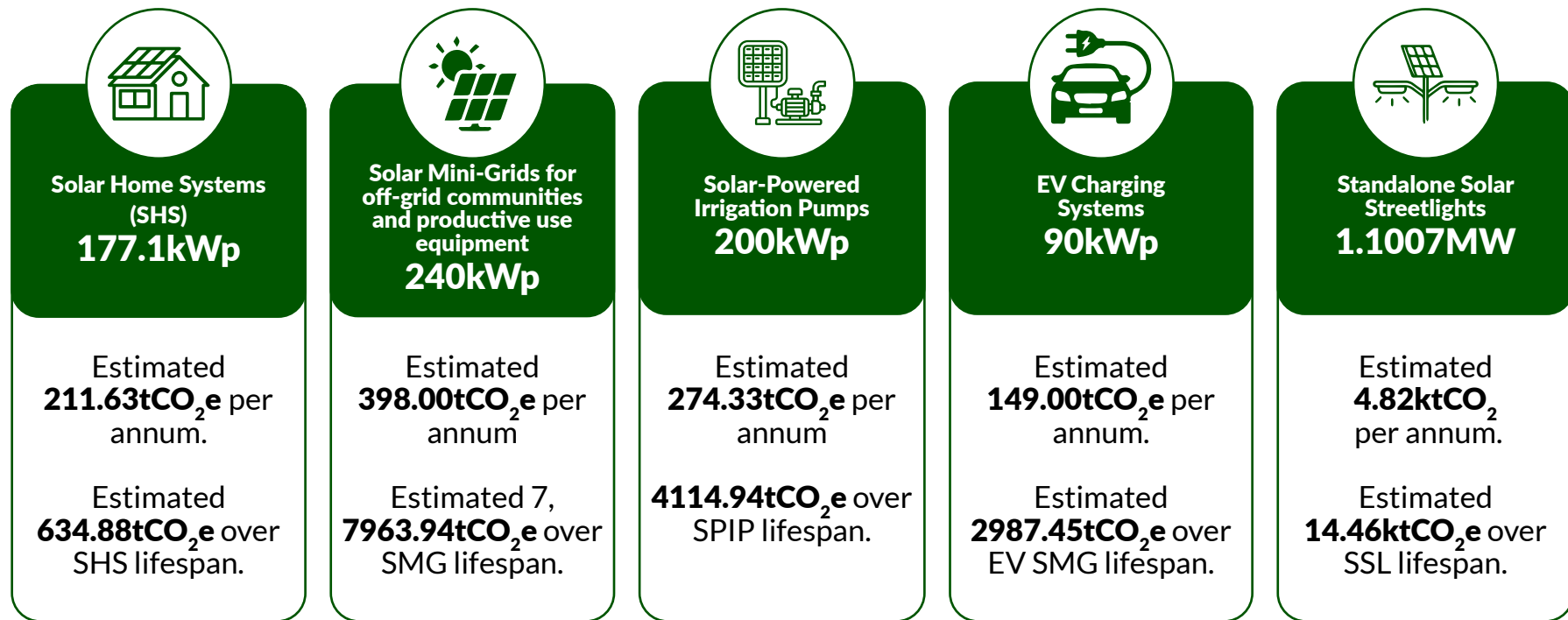


i These impact numbers will increase as the agency continues to implement and monitor all ongoing projects under the 2023 Capital Projects.

Assessing Environmental Impact of Sustainable Energy Access Solutions

2023 Capital Projects Carbon Emission Reduction Estimates

In the implementation of the 2023 Capital Projects, the agency is exploiting a mix of adaptation and mitigation strategies targeted at aiding the reduction in carbon emission through reduced reliance on diesel and petrol-powered generating sets. As the Agency continues to improve connections in unserved and underserved communities nationwide, these communities will continue to record positive environmental impact of these technologies. Across technology types, below are CO₂ reduction estimates expected from the successful implementation of the 2023 REA Capital Projects.



Partnerships

In a bid to align with the Federal Government's growth and development efforts in rural and underserved communities across the nation, the REA has sustained its efforts on crystalizing strategic partnerships in the delivery of the Capital Projects. In the year under review, the Agency is working in lockstep with frontline stakeholders to alleviate energy poverty and accelerate socioeconomic development through agricultural productivity, growth of small and medium scale enterprises as well as security.



On Agricultural Productivity – The REA, in the delivery of the ag-energy objectives of the 2023 Capital Projects, has worked with the Federal Ministry of Agriculture through the Ministry's FADAMA project; a World Bank-funded project. The Agency had signed a Memorandum of Understanding (MoU) with the National Fadama Development Project (NFDP) with an objective to collaborate on various activities related to planning and implementing electrification programs that benefit agriculture, land, and water resources. Since 2023, the Agency has continued to leverage this collaboration to identify and provide rural farming groups with solar-powered irrigation pumps. This partnership has impacted over 700 farmers across the 6 geopolitical zones.



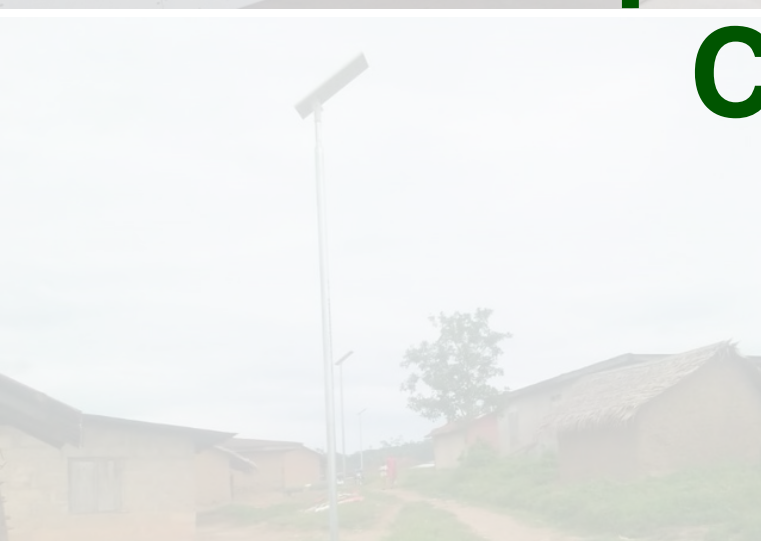
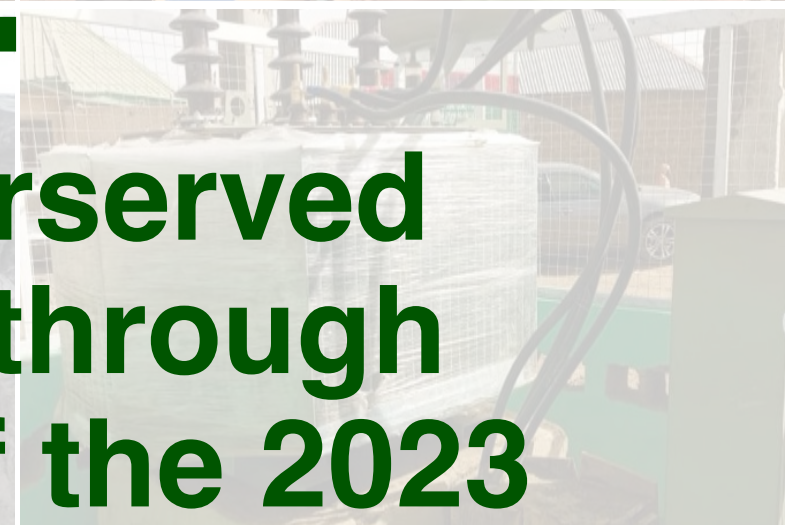
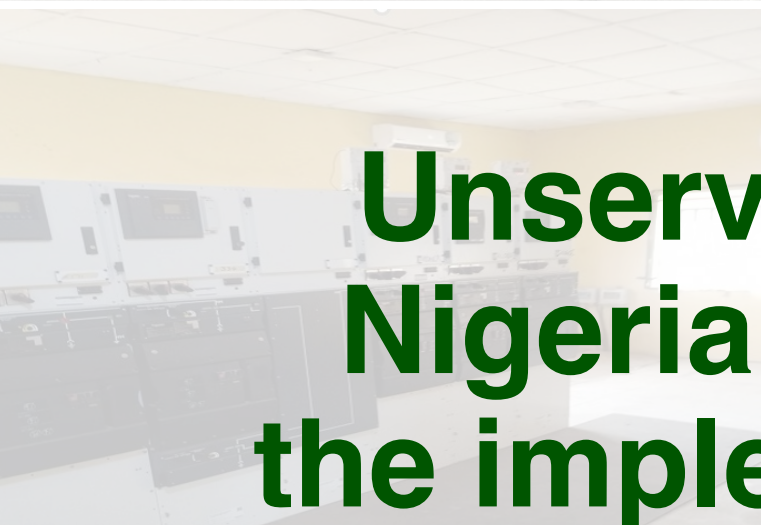
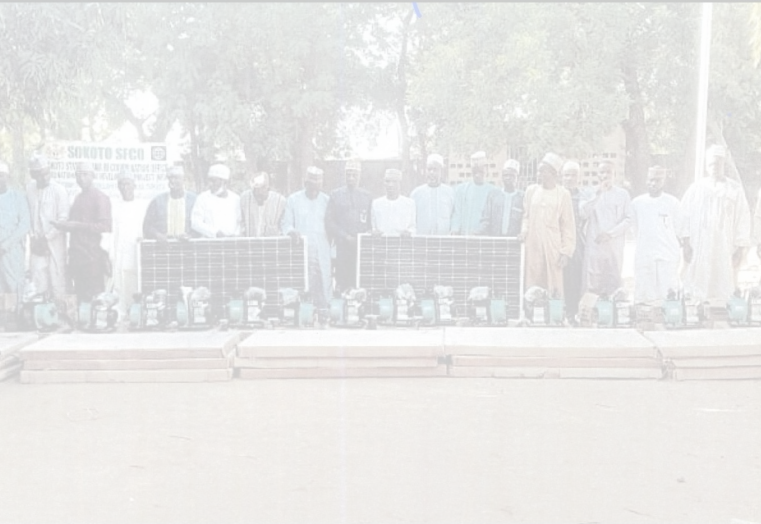
On MSME Growth – In the delivery of its energy access interventions, the REA has maintained an approach designed to tailor energy access solutions to key pain points in the local economy. The Agency has remained in frontline of facilitating conversations on productivity and productive use infrastructure in last-mile communities and economically disadvantaged communities. Working in partnership with institutions like the Small and Medium Enterprise Development Agency of Nigeria (SMEDAN) and the Ministry of Budget and National Planning, the Agency's efforts has aided the impact of the Federal Government's National Poverty Reduction with Growth Strategy (NPRGS). Over 300 MSMEs have been impacted through these efforts.



On Security – Security remains a pivotal pillar in the nation's quest for equity, development and inclusion. As part of the Agency's support of the Federal Government's Nigerian National Security Strategy (NSS), it continues to work closely with institutions such as the Nigerian Army, the Nigerian Customs as well as active citizens in insecurity-prone locations and dark corridors. In line with these efforts, the Agency, under its 2023 Capital projects has installed 445 solar-powered streetlights at key locations, including Custom border control posts and Army Barracks, contributing to a strengthened security infrastructure.



On the Proliferation of EV Innovation and Energy-Efficiency in Transportation – In line with the forward-leaning strategies of the Federal Government on energy efficiency through the President's Presidential Compressed Natural Gas Initiative (PCNGI), the REA in October 2023, finalized partnership with BOVAS & Company Limited, a Presidential Initiative affiliate. This collaboration has greatly supported the mitigation of fuel subsidy removal effects on vulnerable households. In the same vein, the Agency currently installing six (6) pilot EV-charging stations in each of the country's six geopolitical zones, designed to power 2 and 3-wheeler EVs.



1.4m+

Unserved and Underserved Nigerians impacted through the implementation of the 2023 Capital Projects

2023 Capital Project Connection Snapshot

Technology Type			NC	NE	NW	SE	SS	SW
SMG	Capacity	240kWp						
	No. Connections	2,461	328.13	328.13	328.13	492	328	656
	People Impacted	12,305	1,640.67	1,640.67	1,640.67	2,461	1,641	3,281
SHS	Capacity	177.1kWp						
	Household connected	2,561	510	488	473	131	484	475
	People Impacted	12,805	2550	2438	2365	657	2419	2375
SPIP	Capacity	200kWp						
	No. Connections	1,668	278	278	278	278	278	278
	People Impacted	13,344	2,224	2,224	2,224	2,224	2,224	2,224
SSL	Capacity	1.1007MWp						
	No. Beneficiary Communities	366	91	74	60	38	60	43
	People Impacted	915,000	228,431	185,843	149,135	96,107	149,037	106,448
EV	Capacity	900kWp						
	No. Beneficiary Communities	6	1	1	1	1	1	1
	People Impacted	15,000	2,500	2,500	2,500	2,500	2,500	2,500
GRID	Capacity	240MVA						
	No. Transformers 300/500kVA	106	24	21	22	6	6	26
	People Impacted	500,000						
TOTAL NO OF CONNECTIONS			955	912	884	669	879	1,201
TOTAL NO OF PEOPLE IMPACTED			348,879	291,628	261,461	132,148	184,697	236,297

Note :

Population size of a village/community is between (500 -2500)

Average rural/urban Household consumption is between 0.3-2kWh

Beneficiary Voices



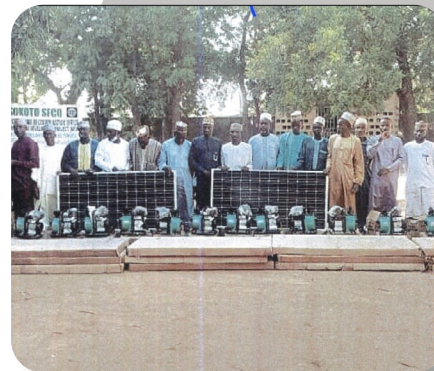
In Esuk Oron, Akwa Ibom State, the REA's intervention has impacted Miss Joan. She explained that she has better control over electricity in her apartment more than ever before as the unit gives her the assurance of energy to power her mobile phone and other domestic appliances.



Madam Nosa, age 84 years, who lives in Nnewi, Anambra State, expressed her delight upon the activation of the solar home system in her modest apartment. She explained that the darkness in her apartment and her inability to catch up with the local news have been her major pain points until her solar home system was activated.



Madam Rebecca, a petty shop owner in Imo State, explained that the solar home system in her neighborhood kiosk enables her to power her devices and equally keep the shop open after dark as her shop stays illuminated round the clock. She equally expressed her delight for the transformative growth of her small business since the REA's intervention.



For the farm clusters in Sokoto State, one of the many farm clusters across the country now utilizing the solar powered irrigation pumps deployed by the REA, the intervention is solving their pain points. The farmers explained that yield and quality of farm produce in their part of the country is dependent on proper irrigation, and the REA intervention is enabling them to solve that problem.

Lessons Learned and Recommendations

- The REA is strengthening its community engagement mechanism, leveraging the community-led Rural Electricity Users Cooperative Society (REUCS) to ensure ownership, safety, and sustainability of all energy access projects deployed to rural and underserved communities.
- To ensure community inclusion as well as accountability in the delivery of energy access technologies, the REA must continue to ensure documentation through the issuance of site possession form at project kick off and site handover form upon project completion, giving the beneficiary community quality assurance of all technologies deployed.
- In line with the Agency's efforts on quality control and enforcement of standards and specifications, it plans to sustain its battle on counterfeit components to improve project lifespan. In the same light, the Agency is facilitating the review of its O&M model to ensure viability.
- While there were concerns about scaling the learning curve in the use of the Solar-Powered Irrigation Pumps (SPIP) by local farmers, the introduction of the technology has positively impacted farming practice in agricultural clusters in last-mile communities. The technical trainings conducted on usage has availed the farmers with the skills and capacity to use the SPIP efficiently.
- The implementation of the 2023 Capital Projects has further expanded the penetration of solar home system units especially in rural and unserved communities. These units are enabling both social and economic impact, especially amongst women who optimize the SHS to illuminate their homes and power their local business. SHS panels and inverters of some beneficiaries were installed at home but extended the bulb connections to their business areas (kiosks/shops) around their homes.
- The solar streetlight technology is enabling the illumination of border posts and insecurity-prone locations in rural communities. This has greatly improved the security of lives and properties.
- As rural communities continue to serve as the nation's food baskets, targeting energy access technologies to agricultural clusters will continue to yield impact. Assessing the local acceptance of technologies such as mini-grids and solar-powered water pumps for irrigation farming vis a vis the impact of productive use of energy in agriculture, wider deployment and investment in ag-energy infrastructure is recommended.
- In consonance with the recommendations captured in the 2023 Act, the Agency will continue to leverage on ongoing strategic collaborations with frontline stakeholders such as the Nigeria Electricity Management Services Agency (NEMSA), the various Distribution Companies (DISCOs) as well as State Governments, to ensure prompt activation of grid extension projects and sustainability of all energy access infrastructure deployed by the REA.



RURAL ELECTRIFICATION AGENCY

ENERGY ≡ EMPOWERMENT ≡ EFFICIENCY