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This action is funded by the European Union

**ANNEX 3**

of the Commission Decision on the Annual Action Programme 2016 in favour of the Federal Republic of Nigeria to be financed from the European Development Fund

**Action Document for "EU Support to Energy Sector in Nigeria- Phase 1"**

<b>1. Title/basic act/ CRIS number</b>	EU Support to Energy Sector in Nigeria – Phase 1 CRIS number: NG/FED/038-527 financed under the 11 <sup>th</sup> European Development Fund			
<b>2. Zone benefiting from the action/location</b>	Nigeria The action shall be carried out at the following location: Federal and State levels in the Federal Republic of Nigeria			
<b>3. Programming document</b>	National Indicative Programme between the European Union and Nigeria for the period 2014-2020			
<b>4. Sector of concentration/ thematic area</b>	Sustainable energy and access to electricity			
<b>5. Amounts concerned</b>	Total estimated cost: EUR 64 500 000 Total amount of EDF contribution EUR 52 000 000 This action is co-financed in joint co-financing by: - GIZ for an estimated amount of EUR 8 000 000 - potential beneficiary authorities at state level for an estimated amount of EUR 4 500 000.			
<b>6. Aid modality and implementa- tion modality</b>	Project Modality Indirect management with DFID and GIZ			
<b>7. a) DAC code(s)</b>	2310 – energy policy and administrative management; 23183 - Energy conservation and demand-side efficiency; 23030 – Solar energy			
<b>b) Main Delivery Channel</b>	Donor Government - 11000			
<b>8. Markers (from CRIS DAC form)</b>	<b>General policy objective</b>	<b>Not targeted</b>	<b>Significant objective</b>	<b>Main objective</b>
	Participation development/good governance		x	<input type="checkbox"/>
	Aid to environment		x	<input type="checkbox"/>
	Gender equality (including Women In Development)	x		<input type="checkbox"/>
	Trade Development		x	<input type="checkbox"/>
	Reproductive, Maternal, New born and Child Health		x	<input type="checkbox"/>

	<b>RIO Convention markers</b>	<b>Not targeted</b>	<b>Significant objective</b>	<b>Main objective</b>
	Biological diversity	x	<input type="checkbox"/>	<input type="checkbox"/>
	Combat desertification	x	<input type="checkbox"/>	<input type="checkbox"/>
	Climate change mitigation		x	<input type="checkbox"/>
	Climate change adaptation	x	<input type="checkbox"/>	<input type="checkbox"/>
<b>9. Global Public Goods and Challenges (GPGC) thematic flagships</b>	N/A			
<b>10. Sustainable Development Goals (SDGs)</b>	SDG 7: Affordable and Clean Energy - Ensure access to affordable, reliable, sustainable and clean energy for all SDG 8: Decent Work and Economic Growth - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all. SDG 3: Good Health and Well Being - Ensure healthy lives and promote well-being for all ages SDG 4: Quality Education - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all			

#### **SUMMARY:**

Electricity supply in Nigeria, the largest country in Sub-Saharan Africa with a population of 180 million, is significantly impaired by critical and frequent outages and power unavailability for almost half of the population.

Within the framework of the 11<sup>th</sup> EDF National Indicative Programme 2014-2020 (NIP), the EU has allocated EUR 150 million to contribute to improving access to the sustainable supply of electricity, particularly for the poorest and in the least developed states, especially in northern Nigeria. In line with the specific objectives identified under this sector of the NIP, this action proposes to improve the regulatory and business environment for increased private sector involvement, especially in renewable and energy efficiency projects, as well as to support the supply of renewable energy for the provision of health and education services in the north.

The action is complementary to other EU interventions in the sector, particularly to blending operations, including on vocational training and a credit facility for renewable energy (RE) and energy efficiency (EE). Synergies exist with the EU Support to the Health Sector in Nigeria Phase I and also with future interventions in the field of vocational training under the EU Emergency Trust Fund for Africa. Through its impact on the reactivation of economic activity in disadvantaged regions, the project will contribute to mitigating the risks of irregular migration. The action will also contribute to the implementation of the Economic Partnership Agreement (EPA) and is part of the EU's support to the EPA Programme for Development in West Africa. Finally, implementation is entrusted to specialised EU Member States' agencies with demonstrated presence and expertise in the country and sector.

## 1 CONTEXT

Despite its rich gas and oil reserves and the corresponding export earnings, Nigeria continues to suffer from a chronic shortage of electricity. Nigeria has available capacity of only 3,500 MW to meet the needs of a population of almost 180 million. The estimated demand for electricity in Nigeria, as of January 2016, is 12,800 MW. Nigeria lags far behind other developing nations in terms of grid-based electricity consumption, with about 126kWh per capita while countries like Ghana and South Africa have an average consumption, respectively, of 361kWh and 3,926kWh. The energy mix is heavily reliant on fossil fuels.

Approximately 45% of Nigerians lack access to electricity and those with access face frequent power outages. Nigerians get a significant portion of their electricity from private, mainly diesel, generators at a higher cost (Nigerian Naira, NGN 62 to 94/kWh) than grid-based (NGN 26 to 48/kWh) power. Self-generation accounts for a significant portion of most businesses' recurrent expenditure and has resulted in environmental degradation and contributed to the increased price of goods and services.

The Nigerian power sector was unbundled and privatised in 2013, leaving only the transmission network in federal government's hands. A transitional electricity market is in force but, for most of 2016, a number of key agencies, principal officers and boards are to be appointed. Further, vandalism and unprecedented large-scale and well-orchestrated sabotage has crippled gas supply, creating chronic gas shortages at power plants. Underinvestment in maintenance and infrastructure has constrained the transmission grid. Finally, high collection and commercial losses impact the financial viability of the privatised distribution companies, as well as a tariff modelled for larger volumes of electricity. Liquidity is still a major issue, given the low generation available.

There are a number of constraints to the business climate, including difficulties to access finance, lack of standards, absence of human resources development plans, management and technical inefficiencies and inadequate pricing mechanisms. This inefficient energy sector is a constraint for the development of the country.

### ***1.1.1 Public Policy Assessment and EU Policy Framework***

The present administration has made the implementation of the sector development agenda, detailed in the 2005 Electricity and Power Sector Reform Act and its alignment across the industry a top priority in order to meet and deliver on its goals, following a bold privatisation of the sector. There is an over-ambitious power generation target of 40,000 MW by 2020, given the number of large scale projects being launched while the intended Nationally Determined Contribution (INDC) for off grid renewable energy (RE) is 13,000MW by 2030. Achieving these targets will depend heavily on political will, adequate funding and the further implementation of the Roadmap for the Power Sector Reform. Streamlining relevant institutions, their goals and targets, and ensuring better coordination, are critical in order to achieve these ambitious targets.<sup>1</sup>

A "National Renewable Energy and Energy Efficiency policy" (NREEEP) was adopted in May 2015 to create an enabling environment for investments in the sector. However, the action plan's precise timelines and targets have still not been agreed upon and the market system currently takes insufficient account of the specific requirements for renewable energy and energy efficiency. A Rural Electrification Fund has been set up to promote, support and provide rural electrification programmes through public and private sector participation, to expand the grid and

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<sup>1</sup> Renewable energy is understood as a flow energy, produced from non-finite sources, including wind, solar, hydro and biomass. Energy efficiency is reducing the amount of energy needed for a product or service.

develop off-grid electrification. However, the fund is not yet operational, mostly due to the low priority given to it by the government.

Access to secure, affordable, clean and sustainable energy services has been identified by the *European Union's Agenda for Change* as one of EU's priorities and a key driver for inclusive growth. The EU strongly supports the United Nations' (UN) Sustainable Development Goal 7 (SDG) on affordable, reliable and clean energy and has been one of the leaders in the UN initiative on Sustainable Energy for All (SE4ALL), aiming at ensuring universal access to modern energy services, doubling the share of renewable energy in the global energy mix and doubling the global rate of improvement in energy efficiency. The EU's target is to help developing countries to provide access to sustainable energy services to 500 million people by 2030. These are in line with targets established within the *Africa-EU Energy Partnership*. Within Europe, the EU aims at 20% final energy consumption from renewable sources by 2020 and, in 2014, its share was 15.3%. Its energy efficiency target is of 27% by 2030; primary and final energy consumption decreased by 8 and 7 % between 2005 and 2013.

### **1.1.2 Stakeholder analysis**

The potential of renewable energy sources for ensuring a reliable electricity supply and improving energy access is getting increasing attention from leading sector institutions. The Federal Ministry of Power Works and Housing (FMPWH) is central to power development in Nigeria, even in the framework of a privatised market. Since 2015, the Ministry has undergone some reform and has a standalone department of Renewables and Energy Efficiency, which makes proposals and coordinates government actions in this field. The Ministry has experienced challenges adapting to its new role post-privatisation and has stepped in into the responsibilities of some of the mandated institutions.

The Nigerian Electricity Regulatory Commission (NERC) is the main sector regulator, responsible for setting tariffs, which are not yet fully cost-reflective, and licensing. It coordinates well with other power sector institutions and should be independent. Nonetheless, NERC has not had a functioning Board since December 2015 and lacks certain specialised skills, which does not always allow it to fully fulfil its mandate.

The Nigerian Bulk Electricity Trading Plc (NBET) purchases bulk electric power and related services from Independent Power Producers (IPPs), such as the generation companies privatised in 2013 (GENCOs). Management positions have been vacant since spring 2016, a significant weakness at a critical time, given its role in integrating large scale solar to the grid.

The Standards Organisation of Nigeria (SON) is responsible for the adoption of standards and for ensuring the compliance of all electrical appliances, while the Nigerian Electricity Management Services Agency (NEMSA) enforces technical standards and regulations, technical inspection, testing and certification of electrical installations. The Rural Electrification Agency (REA) is meant to plan electrification of rural communities in Nigeria and manage the Rural Electrification Fund, blending private and public capital to improve access for the poorest but has not fulfilled its role due to an insufficient management capacity.

Electricity is a shared responsibility between federal and state governments. The primary role of states is to create an enabling environment for better electricity supply in their distribution zones. They are further responsible for generation, transmission and distribution of electricity to rural off-grid communities and have the authority to allocate land and right of way. Some states are taking a keen interest in improving access and have benefited from capacity building regarding electrification planning but capacities are still low.

Other players are, on the one hand, the government owned and privately managed Transmission Company of Nigeria (TCN), which houses the System and Market Operator and is one of the weakest links in the overall grid system due to project management and investment capacity constraints and, on the other hand, the distribution companies, most of which having states as minority investors with a stake of less than 10%, face significant liquidity challenges and several face too many commercial and operational losses to be financially viable.

Federal, state and local authorities, as well as private businesses and households, will be beneficiaries of the programme.

### ***1.1.3 Priority areas for support/problem analysis***

The key problem areas the action seeks to address are lack of access to electricity in disadvantaged areas, poor coordination and insufficient capacity of key agencies to design and implement effective policies, a privatisation process which still has not rendered the desired benefits and a civil society insufficiently mobilised and capable to advocate for the improvement of the sector and the interests of its stakeholders.

The bulk electricity system has been affected by insufficient and inadequate capacity in generation, transmission and distribution and is marred by high levels of system failures and electricity losses. Particularly affected by this access problem is northern Nigeria, which has the least developed transmission and distribution networks and a more sparsely distributed population. Privatisation has been implemented, with the transition of the energy generation and distribution segments to private management but is affected by investment constraints in energy generation and liquidity issues at the distribution end. This means that the grid system will not be extended to reach the isolated areas in the north in the near future. Off grid renewable energy solutions are regarded as potential alternatives to fill in this gap and a study has been undertaken by the Nigeria Energy Support Programme, highlighting where decentralised systems would be most-cost effective. Badly designed and poorly implemented solar projects created negative public opinion about the benefits of solar energy in the country, so it is essential to demonstrate the viability of photovoltaic installations. The northern states receive more solar irradiance than southern ones, as well as having worse health and education indicators, and therefore represent a real opportunity for solar photovoltaic (PV) installations to clinics and schools. Education and health infrastructure has been damaged in the Northeast.

Apart from being one of the most important barriers affecting businesses and the investment climate, lack of reliable access to electricity is also an obstacle to the provision of basic services to the population, for example primary health and education, particularly in isolated areas.

The ongoing reform provides a basis for a sustainable transformation of the electricity sector but there is a general lack of capacity/expertise across agencies involved in the sector. That applies to regulators (NERC), the need for better implementation of standards (SON) as well as their enforcement (NEMSA), and the need for grid integration and management as well as grid code for RE (TCN and NERC). Further, distribution companies (DISCOs) lack business and organisational skills, while ministries/agencies (FMP, REA) need to clarify their mandates as well as improve sector coordination. The lack of administrative capacities for planning and implementing measures at central and state level, incoherent decision-making procedures, insufficient frameworks and regulations and lack of administrative and technical know-how in the entire power sector are a great burden on further development of the power sector value chain as a whole.

Regarding the business environment, fiscal incentives for RE for investors have been introduced but need to be streamlined and clarified across the sector and aligned with ECOWAS Common

External Tariff (CET) provisions, as well as more clearly defined amongst public institutions at federal and state levels. Meanwhile, market-oriented policies are being implemented with an Investment Prospectus launched by the FMPWH to benefit from the efficiencies of the private sector in service delivery and to attract domestic and foreign direct investment. The expected increasing demand for renewable energy and related products and services should provide opportunities for the development of a supply chain of local Small and Medium Enterprises (SMEs). Nonetheless, serious constraints exist for businesses in the electricity sector, such as lack of finance and technical skills.

Civil society could play a positive role in promoting the good functioning of the recently privatised sector while advocating sound policies and the interests of consumers. However, relevant civil society organisations are either not established or have very weak organisational capacity and resources to play that supporting role.

## 2 RISKS AND ASSUMPTIONS

<b>Risks</b>	<b>Risk level (H/M/L)</b>	<b>Mitigating measures</b>
Federal and state institutions (e.g. FMP, NERC, etc) lack commitment to the development of RE and EE.	M	Intensified policy dialogue.
Volatility of the security situation leading to reduced effectiveness and delays in the implementation of activities.	M	Careful selection of partner states, effective communication with implementing partners, communities and security agencies.
Lack of demand for RE technologies.	M	Demonstration projects bring public awareness of the benefits of RE.
Low quality pipeline of project proposals and also of renewable energy (RE), energy efficiency (EE) and rural electrification (RrE) projects.	M	Pre-feasibility studies and building on the project pipeline and lessons learnt from first phases of NESP and Solar Nigeria. Technical assessments on potential projects will be conducted through the pre-feasibility facility.
The operationalisation of the Rural Electrification Fund is delayed.	H	Alternative financing mechanisms will be sought as part of the development of mini-grid business models.
Procurement and import challenges hinder project implementation.	L	Close collaboration with customs and the Ministry of Finance.
Insufficient funding, planning and maintenance capacity in beneficiary states.	H	Project implementers will ensure through TA full ownership from the recipient MDA at State level, so that maintenance is provisioned for from inception.
<b>Assumptions</b>		
<ul style="list-style-type: none"> <li>• The government remains committed to making RE an integral part of the energy mix</li> <li>• The security situation allows for the implementation of activities in the selected states</li> <li>• Private and public sector funds are available to finance large scale RE projects.</li> <li>• Effective governance and programme monitoring exist</li> </ul>		

### 3 LESSONS LEARNT, COMPLEMENTARITY AND CROSS-CUTTING ISSUES

#### 3.1 Lessons learnt

The 10<sup>th</sup> European Development Fund financed the *Nigeria Energy Support Programme* (NESP), implemented by GIZ, to support improved access to energy through renewable energy and energy efficiency measures. A policy for RE and EE was adopted, feed-in-tariffs and grid codes revised, a Building Energy Efficiency Guideline drafted, organisational assessment and development conducted at National Power Training Institute of Nigeria (NAPTIN) and a clean energy training partnership network created. Pilots have been launched on Energy Management Systems, solar water heating and rural electrification, through mini-grids.

One implementation challenge has been the engagement with the Rural Electrification Agency (REA) including the operationalisation of the Rural Electrification Fund, which is administered by REA. Another relates to the budgetary constraints of federal and state governments, which means that partner contribution could not always be enforced within our projects. There is a need to strike a balance between local ownership and programme progress, which can be done by engaging beneficiaries early in programme development. Ownership has an important role to play in maintenance and adequate technical assistance needs to be provided to ensure ownership. Lack of effective operations and maintenance is the biggest reason for social solar project failure across the world and this verifies in Nigeria, with the aggravation that projects have also often not been well designed.

The first phases of Solar Nigeria, implemented in Lagos and Kaduna since 2014, showed that, regardless of counterpart funding commitment, technical assistance on operations and maintenance is needed up to one year post commissioning. Another lesson is that political cycles must be factored into project planning and that beneficiaries should be educated where possible with respect to the renewable energy technology being used. Further, site selection is a sensitive issue, as multiple plans may exist for potential sites and priorities of government may change after an approved list has been agreed. State government is often concerned with numbers of facilities receiving support, rather than total coverage for individual sites. However, there are different governance and funding challenges that need addressing in northern states than in Lagos, where the first phase of Solar Nigeria has been implemented.

Finally, procurement and import of goods to Nigeria has shown to be a potential delaying factor and has to be planned for carefully. Some remedies are further operationalising the institutions involved and careful attention to the implementation of duty waivers.

#### 3.2 Complementarity, synergy and donor coordination

The action complements EU cooperation initiatives in Nigeria. First, the activities in support of the improvement of quality aspects, streamlining of the investment climate and the development of local supply chains are in line and will provide continuity to the Nigeria Competitiveness Support Programme, as well as blending operations such as the credit facility for DISCOs' investment, the credit line for RE/EE small projects (SUNREF) and support to NAPTIN. A division of roles has been established by which AFD will concentrate on the strengthening of the vocational training institute for the energy sector NAPTIN through a blending operation financed by the EU, while GIZ will focus through this action on other key aspects affecting the business environment of the energy sector. In addition, the EU is working with GIZ on the preparation of a project for possible support under the EU Emergency Trust Fund for Africa which will cover vocational training for other key sectors of the Nigerian economy (agricultural processing, construction). Finally, complementarity will be ensured with EU interventions at the regional level in energy and other related sectors.

Second, the action will complement the EU Support to the Health Sector in Nigeria by and ECHO activities focusing on northern states and integrating efforts in the electrification of public health facilities. ECHO is focused on the response to the humanitarian crisis in the three North Eastern states of the country, including Adamawa, and namely engaged in the provision of nutrition and health services for children under 5 and pregnant and lactating women. One of the northern states where the action will operate will also be in line with the reconstruction and peace building effort in the north east, an initiative where the EU is playing a key role.

Several development partners are already active, or planning to get involved, in supporting the energy sector in Nigeria. Indeed, EU, GIZ, AFD, AfDB, JICA, DFID, USAID and the World Bank finance and implement various types of institutional support measures, actions, studies and capacity building programmes. A donor coordination group is in place to exchange information, conduct policy dialogue with government and coordinate donor activities.

DFID funds the Nigeria Infrastructure Advisory Facility (NIAF) which supports institutions in the energy sector, mainly to implement the initiated reform measures and do strategic planning. Solar Nigeria has provided electricity to schools and clinics, mostly in rural Lagos, and is scaling up activities to other states, while bringing down barriers to entry for solar to private consumers and SMEs and, finally, encouraging on-grid solar. DFID is considering additional funding for the north east which would be delivered via the Solar Nigeria Social component. DFID has to date funded GBP 53.8 million (the programme was recently extended from its original GBP 37.1 million by GBP 16.7 million in April 2016). This funding has supported the Social Phases 1 and 2 and continues to support the Commercial and Consumer components, planning and extension activities in the north, all of which underpins the proposed Social Phase 3 element for EU funding. USAID and DFID are currently agreeing on partnership options to support Solar Nigeria's Commercial component TA, which would again support Social Phase 3 sustainability.

GIZ has implemented the EUR 24 500 000 Nigerian Energy Support Programme (NESP) for the EU and the German Government, including components on RE, EE, rural electrification and vocational training.

AFD is contributing to transmission system upgrade and extension, supporting distribution companies (DISCOs) and vocational training (NAPTIN), including with EU grants. It will be looking into energy efficiency gains and renewable energy through a credit line, SUNREF, in 2017.

The World Bank has focused on improving gas supplies to thermal power stations and the transmission and distribution infrastructure. Other programmes aim to rehabilitate hydro power plants and to improve access, namely by mapping least-cost expansion of the grid. Similarly, the African Development Bank provides direct financing to FMPWH and partial risk guarantees have been made available in support of the privatisation.

JICA provides technical advisory services in the fields of energy planning and hydro power development. USAID provides general energy policy consultancy, has set up a financing facility for renewable energy and is scaling up its support through the Power Africa initiative.

### **3.3 Cross-cutting issues**

Environmental issues will be tackled by the project. Indeed, the increased on-grid electricity supply, use of RE and improved EE will reduce the need for the combustion of fossil fuels (diesel and petrol generators), charcoal and firewood, as well as ensure sustainable global benefits in slowing the growth rate of greenhouse gas emissions.

The programme takes into account the necessity of gender mainstreaming, namely the electrification component, which will have a focus on girls schools and facilities providing maternal health care, as well as marginal groups participation. Attendance/user data will be

disaggregated by gender in its monitoring systems and project planning. In this way, implementation will lead to improved health and education outcomes for users, especially women and girls.

Economic activity will be activated in disadvantaged regions by addressing constraints affecting the business climate in the sector, supporting the kick-starting of private investment and improving reliability of energy supply, which could mitigate the risks of irregular migration.

## **4 DESCRIPTION OF THE ACTION**

### **4.1 Objectives/results**

This programme is relevant for the United Nations 2030 Agenda on Sustainable Development. It contributes primarily to the progressive achievement of SDG Goal 7, to ensure access to affordable, reliable, sustainable and clean energy for all, but also promotes progress towards Goals 8 - Decent Work and Economic Growth, 3 - Good Health and Well Being, 4 - Quality Education. This does not imply a commitment by the country benefiting from this programme.

The **Overall Objective/Impact** of the action is to contribute to Nigeria's economic and social development through better access to reliable and sustainable energy.

The **Specific Objectives/Outcomes** are:

- To enable and foster investments in a domestic market for Renewable Energy and Energy Efficiency;
- To improve access to electricity for disadvantaged, mostly rural, communities, also in conflict affected areas.

Expected **Outputs/Results** are:

- A strengthened policy and regulatory framework which is conducive to the provision of reliable and sustainable energy;
- Implementation mechanisms for RE and EE provide access, CO2 emissions reductions and scaling up sustainable business models in the sector;
- Reduction of barriers for market and business development in the sector by strengthening technical market capacities and conducive frameworks;
- Improved reliability of health and education services in three northern states through providing off-grid access to renewable energy to clinics and schools.

### **4.2 Main activities**

***Component 1: Building framework and pre-conditions in the RE/EE sector, to enable policy decisions, coherent electrification planning and to foster investment***

- Provide capacity building and specialised embedded technical expertise to key public policy, regulatory and implementation agencies, facilitate their coordination and the updating of key policy documents
- Improve system and market operator capacity for grid management and grid expansion planning

- Conduct an investment grade energy resource mapping exercise, carry out electrification surveys and establish rural electrification plans in selected states

***Component 2: Improving access to electricity through RE and EE, scaling up sustainable business models***

- Procure up to 2000 MW on-grid solar PV capacity in a structured bidding approach
- Give access to power through sustainable and scalable solutions to 100.000 previously un-electrified rural people
- Deploy sustainable energy solutions in the agro-processing sector allowing for 10.000t CO2 saved per annum.
- Put in place energy efficiency measures in buildings and industry leading to at least 15% energy savings and a reduction of CO2 emissions

***Component 3: Strengthening technical market capacities and conducive frameworks***

- Strengthen capacities of quality infrastructure institutions to enforce quality standards in the Nigerian RE/EE market (standardisation, accreditation and conformity assessment bodies) and ensure harmonisation with regional and global standards
- Foster local market development through the professionalisation of organised representation in the sector, including civil society organisations, strengthening local technical capacities and supply chains
- Support streamlining investment entry procedures into the energy sector and importing clean energy products
- Support training institutions, particularly on clean energy and the development of a nation-wide certification process

***Component 4: Improving reliability of health and education services in three northern states through renewable energy solutions***

- Provide sustainable solar and hybrid off-grid systems for education and health facilities, including schools, boarding schools, clinics and health centres, in 3 northern states (Kaduna, Kano and Adamawa), for 650.000 beneficiaries and emissions reductions of 15000 tCO2 per annum.
- Promote equal gender opportunities by prioritising all girls' schools, female teacher training and maternal health facilities.

### **4.3 Intervention logic**

The proposed intervention follows the strategy defined in the NIP and during the identification phase, which is based on the combination of "soft" (technical assistance, specialised advice) and "hard" (actual investment in energy infrastructure) actions, and prioritising filling a gap in access to electricity in the north. This first phase of EU Support to the Energy Sector in Nigeria aims at putting in place all the "soft" elements required for the whole NIP intervention while kick-starting the investment in energy infrastructure. Subsequent phases will focus on the identification of blending operations and the further expansion of EU investment in energy infrastructure.

The action addresses the main issues identified affecting the overall sector, as described in Section 1.1.3. It does so by providing specialised technical assistance and embedded advisory services to key agencies and stakeholders through an integrated project managed by a well-qualified EU Member State agency, namely GIZ. This approach offers the possibility of targeting

support for development and implementation of key regulatory and policy decisions in a flexible way. In doing so, this component also helps the EU position itself as a leading dialogue partner with critical government agencies and civil society stakeholders.

The action combines this policy and regulatory aspect with specific activities aiming at "kick-starting" private sector investment in the sector and which should demonstrate the feasibility of certain business models for broader scalability. In this way, the action not only addresses the need to activate a recently privatised sector but will also deliver small-scale energy generation infrastructure.

EU investment in energy infrastructure in Nigeria starts through this action with a component to provide reliable renewable energy supply to health and education centers in the north of the country, in line with the NIP strategy. The budget for this component will be channeled to the supply of equipment and works, combined with technical assistance to ensure correct operational maintenance during and after the life of the project. State selection is in line with the priorities defined by the EU for cooperation under the 11<sup>th</sup> EDF. In addition, through the selection of the north eastern state of Adamawa, this component will complement EU Support to the Nigeria Health Sector, in the electrification of health facilities and also the efforts already initiated to support the reconstruction of the north east. The programme will focus on building solid long-lasting relationships with state actors to ensure Operations and Maintenance (O&M) budget materialises and is implemented even after TA has ended. Detailed preparatory work with government counterparts on procurement and implementation modalities and longer term institutional arrangements is proving effective in Lagos and in the inception work for the Northern Clinics pilot in Kaduna.

Finally, through specific activities, such as launching mini-grid pilots or even through the policy dialogue, the action could act as a platform to feed in proposals for potential blending operations, therefore contributing further to the investment in infrastructure sought for the overall EU intervention in the sector.

Through its impact on the reactivation of economic activity in disadvantaged regions, the project will contribute to mitigating the risks of irregular migration. The action will also contribute to the implementation of the Economic Partnership Agreement (EPA) and is part of the EU's support to the EPA Programme for Development in West Africa.

## **5 IMPLEMENTATION**

### **5.1 Financing agreement**

In order to implement this action, it is foreseen to conclude a financing agreement with the partner country, referred to in Article 17 of Annex IV to the ACP-EU Partnership Agreement.

### **5.2 Indicative implementation period**

The indicative operational implementation period of this action, during which the activities described in section 4.2 will be carried out and the corresponding contracts and agreements implemented, is 60 months from the date of entry into force of the financing agreement.

Extensions of the implementation period may be agreed by the Commission's authorising officer responsible by amending this decision and the relevant contracts and agreements; such amendments to this decision constitute non-substantial amendment in the sense of Article 9(4) of Regulation (EU) 2015/322.

### **5.3 Implementation of the budget support component**

N/A

### **5.4 Implementation modalities**

#### **5.4.1 Indirect management with Member State agencies**

##### **(A) Deutsche Gesellschaft für Internationale Zusammenarbeit - GIZ**

A part of this action, related to components 1 to 3, may be implemented in indirect management with GIZ, in accordance with Article 58(1)(c) of Regulation (EU, Euratom) No 966/2012, applicable in accordance with Article 17 of Regulation (EU) 2015/323. This implementation entails hiring teams of experts to steer the programmes, in collaboration with relevant Nigerian institutions. The technical team will design and implement the activities either directly or indirectly by contracting service providers. It will write the terms of reference of the tasks, invite tenderers, report on the implementation progress and ensure the quality of the results. It will provide technical expertise to key agencies and associations, including at state level, on grid and off-grid expansion planning, clean energy products and services, as well as establish roll-out support mechanisms for RE/EE projects.

A specific team will be responsible for communication and visibility activities. This implementation is justified because of the experience and good track record of the entity in the sector in Nigeria, namely through the implementation of NESP I, and the alignment of the project proposed with the needs of the country and NIP objectives.

The entrusted entity would carry out the following budget-implementation tasks: launching calls for tenders and for proposals where appropriate; definition of eligibility, selection and award criteria; evaluation of tenders and proposals if appropriate; award of grants and contracts; concluding and managing contracts, carrying out payments, recovering money due, among others.

##### **(B) Department for International Development/UKAID – DFID**

A part of this action, related to component 4, may be implemented in indirect management with DFID, in accordance with Article 58(1)(c) of Regulation (EU, Euratom) No 966/2012, applicable in accordance with Article 17 of Regulation (EU) 2015/323. This implementation entails hiring teams of experts to steer the programmes, in collaboration with relevant Nigerian institutions. The technical team will design and implement the activities either directly or indirectly by contracting service providers. It will write the terms of reference of the tasks, invite tenderers, report on the implementation progress and ensure the quality of the results. A specific team will be responsible for communication and visibility activities. This implementation is justified because of the alignment of the project proposed with the needs of the country and NIP objectives, as well as the experience and good track record of the entity in the sector in Nigeria, through the implementation of the Nigeria Infrastructure Advisory Facility - NIAF, and its spin-off, Solar Nigeria.

The entrusted entity would carry out the following budget-implementation tasks: launching calls for tenders and for proposals where appropriate; definition of eligibility, selection and award criteria; evaluation of tenders and proposals if appropriate; award of grants and contracts; concluding and managing contracts, carrying out payments, recovering money due, among others. Capital Expenditure will cover equipment, procurement costs, installation, logistics, testing of the solar equipment. The entity will also be responsible for Technical Support (energy audits, systems design/review, engineering oversight/sign-off, in-state stakeholder management and training, post commissioning O&M planning and state agency support, etc), as well as Monitoring and Evaluation and Programme Management (Team leadership and oversight, financial management, donor coordination, communication).

## 5.5 Scope of geographical eligibility for procurement and grants

The geographical eligibility in terms of place of establishment for participating in procurement and grant award procedures and in terms of origin of supplies purchased as established in the basic act and set out in the relevant contractual documents shall apply.

The Commission's authorising officer responsible may extend the geographical eligibility in accordance with Article 22(1)(b) of Annex IV to the ACP-EU Partnership Agreement on the basis of urgency or of unavailability of products and services in the markets of the countries concerned, or in other duly substantiated cases where the eligibility rules would make the realisation of this action impossible or exceedingly difficult.

## 5.6 Indicative budget

	<b>EU contribution (in EUR)</b>	<b>Indicative third party contribution (in EUR)</b>
<b>5.4.1(A) Indirect management with GIZ (Components 1, 2, 3) - indicative amounts</b>	<b>20 000 000</b>	<b>8 000 000</b>
<i>Programme Management/ Administration</i>	<i>2 500 000</i>	<i>1 000 000</i>
<i>Component 1: Frameworks, conditions and planning</i>	<i>4 600 000</i>	<i>1 800 000</i>
<i>Component 2 RE access and EE</i>	<i>9 200 000</i>	<i>3 700 000</i>
<i>Component 3 Market and business development</i>	<i>3 700 000</i>	<i>1 500 000</i>
<b>5.4.1(B) Indirect management with DFID - (Component 4) - indicative amounts</b>	<b>30 000 000</b>	<b>4 500 000</b>
<i>Independent solar power systems for schools and clinics (capital expenditure)</i>	<i>27 000 000</i>	<i>4 500 000</i>
<i>Technical assistance and programme management</i>	<i>3 000 000</i>	<i>0</i>
<b>5.9 Evaluation and 5.10 Audit</b>	<b>500 000</b>	<b>N/A</b>
<b>5.11 Communication and visibility</b>	<b>300 000</b>	<b>N/A</b>
<b>Contingencies</b>	<b>1 200 000</b>	<b>N/A</b>
<b>Total</b>	<b>52 000 000</b>	<b>12 500 000</b>

## 5.7 Organisational set-up and responsibilities

Components 1-3 will be implemented through an integrated project by GIZ, component 4 similarly by DFID. A governance structure will be put in place for all interventions of the programme. This will rely on the establishment of project Steering Committees which will include representatives from the beneficiary institutions, the EU Delegation to Nigeria, implementing partners and other stakeholders relevant to the objectives and activities of the specific action. Steering Committees will review and approve work plans and reports, review implementation and define actions to address any issues identified. The programme will also set up mechanisms to strengthen high level dialogue between key government agencies, development partners and other stakeholders active in the sector.

State partners are expected to commit regular O&M funds and locate projects within ministries/agencies, with assigned staff to manage. They will be actively engaged throughout the design, inception and installation phases, with regular high-level and joint planning meetings. The programme will negotiate counterpart funding agreements – financial contributions for

ongoing O&M and in kind, through staff time – during the inception period in each state. DFID will lead on capacity building with Ministries, Departments and Agencies (MDAs) in the run up to site handover and then shift to a supporting role, with partner state agencies and facility managers in the lead.

## **5.8 Performance monitoring and reporting**

The day-to-day technical and financial monitoring of the implementation of this action will be a continuous process and part of the implementing partner's responsibilities. To this aim, the implementing partner shall establish a permanent internal, technical and financial monitoring system for the action and elaborate regular progress reports (not less than annual) and final reports. Every report shall provide an accurate account of implementation of the action, difficulties encountered, changes introduced, as well as the degree of achievement of its results (outputs and direct outcomes) as measured by corresponding indicators, using as reference the logframe matrix. The report shall be laid out in such a way as to allow monitoring of the means envisaged and employed and of the budget details for the action. The final report, narrative and financial, will cover the entire period of the action implementation.

The Commission may undertake additional project monitoring visits both through its own staff and through independent consultants recruited directly by the Commission for independent monitoring reviews (or recruited by the responsible agent contracted by the Commission for implementing such reviews).

## **5.9 Evaluation**

Having regard to the importance and nature of the action, mid-term and final evaluations will be carried out for this action or its components via independent consultants contracted by the Commission.

A mid-term evaluation will be carried out for progress review, problem solving, and learning purposes.

A final evaluation will be carried out for accountability and learning purposes at various levels (including for policy revision).

The Commission shall inform the implementing partner at least one month in advance of the dates foreseen for the evaluation missions. The implementing partner shall collaborate efficiently and effectively with the evaluation experts, and inter alia provide them with all necessary information and documentation, as well as access to the project premises and activities.

The evaluation reports shall be shared with the partner country and other key stakeholders. The implementing partner and the Commission shall analyse the conclusions and recommendations of the evaluations and, where appropriate, in agreement with the partner country, jointly decide on the follow-up actions to be taken and any adjustments necessary, including, if indicated, the reorientation of the project.

Indicatively, two contracts for evaluation services shall be concluded under a framework contract half way into the implementation period and at the end of the programme.

## **5.10 Audit**

Without prejudice to the obligations applicable to contracts concluded for the implementation of this action, the Commission may, on the basis of a risk assessment, contract independent audits or expenditure verification assignments for one or several contracts or agreements.

Indicatively, one contract for audit services shall be concluded under a framework contract at the end of the implementation period of the programme.

## **5.11 Communication and visibility**

Communication and visibility of the EU is a legal obligation for all external actions funded by the EU.

This action shall contain communication and visibility measures which shall be based on a specific Communication and Visibility Plan of the Action, to be elaborated at the start of implementation and supported with the budget indicated in section 5.6 above.

In terms of legal obligations on communication and visibility, the measures shall be implemented by the Commission, the partner country, contractors, grant beneficiaries and/or entrusted entities. Appropriate contractual obligations shall be included in, respectively, the financing agreement, procurement and grant contracts, and delegation agreements.

The Communication and Visibility Manual for European Union External Action shall be used to establish the Communication and Visibility Plan of the Action and the appropriate contractual obligations.

Communication and visibility actions will be procured through a framework contract which will be concluded in the first year of implementation of the programme.

## APPENDIX - LOGFRAME MATRIX (FOR PROJECT MODALITY) <sup>2</sup>

The activities, the expected outputs and all the indicators, targets and baselines included in the logframe matrix are indicative and may be updated during the implementation of the action, no amendment being required to the financing decision. When it is not possible to determine the outputs of an action at formulation stage, intermediary outcomes should be presented and the outputs defined during inception of the overall programme and its components. The indicative logframe matrix will evolve during the lifetime of the action: new lines will be added for including the activities as well as new columns for intermediary targets (milestones) for the output and outcome indicators whenever it is relevant for monitoring and reporting purposes. Note also that indicators should be disaggregated by sex whenever relevant.

	Results chain	Indicators	Baselines (incl. reference year)	Targets (incl. reference year)	Sources and means of verification	Assumptions
Overall objective: Impact	Contribute to Nigeria's economic and social development through a better access to reliable and sustainable energy.	<ul style="list-style-type: none"> <li>To enable and foster investments in a domestic market for Renewable Energy and Energy Efficiency;</li> <li>Improved access to electricity for disadvantaged, mostly rural, communities, also in conflict affected areas</li> </ul>	<b>2016:</b> 45% of Nigerians lack access to electricity and those who do face frequent outages.	Contribute to the government's ambition to diversify the energy mix by 2020.	Project Reports; Government reports; Sector reports; Donor/Partners reports' strategy	

<sup>2</sup> Indicators aligned with the relevant programming document are marked with '\*' and indicators aligned to the EU Results Framework with '\*\*'.

<p style="text-align: center;"><b>Specific objective(s): Outcome(s)</b></p>	<p>SO1: Building framework and pre-conditions in the RE/EE sector, to enable policy decisions, coherent electrification planning and to foster investment</p> <p>SO2: Improving access to electricity through RE and EE, scaling up sustainable business models</p> <p>SO3: Strengthening technical market capacities and conducive frameworks</p> <p>SO4: Improving reliability of health and education services in three Northern states through renewable energy solutions</p>	<ul style="list-style-type: none"> <li>• A strengthened policy and regulatory framework in place which is conducive to the provision of reliable and sustainable energy</li> <li>• Favourable conditions in place for promoting private business and investment activities in the Nigerian energy sector, particularly in the RE/EE areas</li> <li>• Implementation of successful RE/EE projects to demonstrate the sustainability of approaches beyond the pilot stage</li> <li>• Improved capacity of civil society organisations involved in the energy sector</li> <li>• Improve reliability of health and education services in three Northern states by providing off-grid access to renewable energy to clinics and schools.</li> </ul>			<p>Project Reports; Government reports; Sector reports; Donor/Partners reports' strategy.</p>	<p>Political stability in Nigeria is maintained.</p> <p>The Federal Government of Nigeria remains committed to the promotion of RE/EE and rural electrification; and sets-up relevant promotion strategies / instruments as well as providing funds for these.</p>
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	<p><b>SO1:</b></p> <p>1. Provide capacity building and specialised embedded technical expertise to key public policy, regulatory and implementation agencies, facilitate their coordination and the updating of key policy documents</p>	<p>1.1 Policy documents for the application of RE/RrE/EE are updated, endorsed and implemented as basis for the electrification of Nigeria in a coherent energy mix.</p> <p>1.2 Key stakeholders on federal and state level in the sector are able to collect and assess data and thus monitor the implementation of policies</p> <p>1.3 The capacities of the Nigerian Electricity Regulatory Authority NERC to implement its core mandate are strengthened</p>	<p>1.1 Status: National Renewable Energy and Energy Efficiency Policy has been approved May 2015 with support of NESP I</p> <p>National Renewable Energy Action Plan and National Energy Efficiency Action Plan have been approved July 2016 as part of the Sustainable Energy 4 All Action Agenda, alignment of all policies within the sector and with climate targets needs to be evaluated, alignment of stakeholders for implementation unclear</p> <p>Draft Rural Electrification Plan and Strategy has been developed 2014/15, but not approved, update and alignment with National Renewable Energy Action Plan needed.</p> <p>1.2 A central data management system is currently being installed at the Federal Ministry of Power, Works and Housing as part of NESP II support. No coherent data collection, assessment and monitoring process is established between key stakeholders on federal and state level</p> <p>1.3 Sector coordination is challenged by lacking technical capacities of NERC to oversee core mandate functions such as orders towards other sector agencies with regards to power</p>		<p>1.1 Official Gazette/ reports of endorsement</p> <p>Official implementation procedures</p> <p>Roadmap for implementation</p> <p>Report on trainings</p> <p>1.2 Monitoring framework</p> <p>Reports on data collection activities</p> <p>1.3 Needs assessment</p> <p>Training documentation</p> <p>Documentation of improved process such as tariff setting/ endorsement of regulation</p>	<p>Efficient inter-departmental coordination between FMP, FME, ECN, NERC</p> <p>Consistency in political leadership</p> <p>Availability of resources (for funding of staff and support mechanisms)</p>
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