

Annual Work Plan 2015 Cover Page

Country: Nigeria

**Narrative Summary**

UNDP in partnership with the **ENERGY COMMISSION OF NIGERIA (ECN)** is promoting initiatives towards improving access to renewable and rural energy; building capacity to develop, coordinate and monitor energy diversification policy and strategy for equitable energy access, and reducing/mitigating the effects of climate change

**Programme Period:** 2014 - 2017

**Programme Component:** UNDP 8<sup>th</sup> CP Intervention

**Programme Title:** Human Security and Risk Management

**Implementing Agent:** ECN

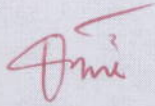
**Duration:** 2015

Estimated annualized budget: USD 430,920.89

Allocated resources (Total): USD 430,920.89

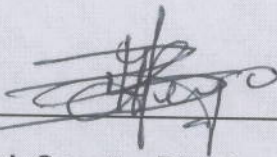
- Government: 0.00 US\$
- Regular: 0.00 US\$

Agreed by Implementing Partner: **ENERGY COMMISSION OF NIGERIA (ECN)**



Prof. Eli J. Bala, Director-General/CEO

Agreed by UNDP:



Pa Lamin Beyai, Country Director



## Section 1:

### Background:

Total Area	92.4 million hectares (Land 86%, Water 14%)
Forest and Woodlands	11.6%
Polity	Democracy (Presidential System)
Population	158.80 million (2010 est.)
Economic Indicators	
• GDP growth rate	7.9% (2010)
• Inflation rate	11.8% (2010)
• Interest rate	15.74%, Prime (2010)
• Exchange rate	1\$ = N162 (2012)
• Major contributor to foreign Exchange earnings	Oil (approx. 87.57% in 2010)
Social Indicators (2009)	
• GDP/Capita	\$1,235.92 (2010)
• Energy Intensity	0.1 kgoe/\$
• Energy Consumption/Capita	100 kgoe
• Electricity Consumption/Capita	130 kWh
• Urbanization	40%
• Electricity Access	55.2%
• Population Growth rate	3.2%
• Adult Literacy rate	64%
• Life Expectancy	54 years
• Incidence of Poverty	54%

Source: State Bureau of Statistics, MDG reports, Environmental Impact study

### Background:

Nigeria is blessed with abundant primary energy resources. These include reserves of crude oil and natural gas, coal, tar sands and renewable energy resources such as hydro, fuelwood, solar, wind and biomass. However, since the late 1960s, the economy has been solely dependent on the exploitation of oil to meet its development expenditures. In 2001, oil revenue alone accounted for about 98.7% of exports and 76.5% of total government revenues. However, its contribution to GDP was only 10.6%. This shows the low level of value added, by the oil sector, to the economy. By year 2011, the contribution of petroleum to total exports has declined to 79.6% with an average of 88.5% between 2001 and 2011. Between 2001 and 2011, petroleum accounted for 69% of total government gross revenue on average. However, its contribution has generally been declining over the period.

The total commercial energy consumption in 2001 was 45.55 million tce and 47.82 million tce in 2011. The dominant source of commercial energy was oil, accounting for over 66% of commercial energy consumption between early 1970s and 1988. Its contribution, however, dropped from 46.7% to 31.9% between 1990 and 2001; by year 2011, oil accounted for about 26.5% of total commercial energy consumption. Natural gas production, which is mostly in association with oil production, is appreciable. Its contribution to commercial energy consumption, on the other hand, had increased from 29.8% in 1990 to 61.9% in 2001 and to 71.61% by 2011. Natural gas and hydro are the dominant energy sources for grid connected electricity generation, with natural gas contributing about 2%. Over 50% of the natural gas produced was being flared by the end of 2001. However, the proportion of gas flared in total



production declined to about 23.35% by 2011. Up to the early 1960s coal production was significant and dominated the commercial energy supply. It was also the predominant source of energy for rail transportation and electricity generation. However, partly due to fuel substitution to oil and gas, coal production and utilization dropped to an insignificant level. In 2001, coal's share of the total commercial energy consumption was about 0.02% and it maintained that proportion up to 2011.

With respect to the renewable energy resources, hydro power plants entered the Nigerian energy scene in the 1960's. Presently hydro is the second largest energy resource for electricity generation in the country, contributing about 32% of the total installed grid-connected electricity generating capacity.

Fuelwood is the dominant source of energy in the domestic sector. It is also used in other sectors of the economy, such as cottage industries. The share of fuelwood and charcoal in total energy consumption was estimated to be about 40% in 2000. The current share may not have changed very significantly from this figure. This is largely due to inability of low income consumers to pay for, as well as scarcity of, substitutes such as kerosene, cooking gas and electricity. Over the years the fuelwood supply/demand imbalance in some parts of the country has adversely affected the economic well-being of the people. On the national level, increasing fuelwood consumption contributes to deforestation with consequent desertification and soil erosion.

Solar energy intensity is generally high in the country. Solar energy is widely used in the country for drying, most especially of agricultural products. But it is normally lumped with the informal sector, which is not adequately captured in the national accounts. Nevertheless, there has been significant increase in the solar photovoltaic systems especially for lighting, water pumping and communications. Solar energy has great potential for the provision of power for rural development.

**Socio-Economic Characteristics:** The nation's overall economy, as measured by the Gross Domestic Product (GDP) at 1990 constant basic prices, has grown by about 6.63% annually between 2001 and 2011. The GDP was ₦833.40 billion in the year 2011, at 1990 constant basic prices. On a per capita basis, it has fluctuated between ₦3,634.51 and ₦5,069.74, with an average of ₦4,232.77, between 2001 and the year 2011. Over the period 2001 to 2011, the per capita GDP has, however, generally grown at an annual average rate of 1.45%. The population was estimated to be 140.42 million people (2006 Census), with a growth rate of about 3.2% and a rural population of over 60% of the total.

The structure of the economy has changed significantly since independence in 1960. Agriculture was the most important sector of the economy, whose contribution to the GDP was above 54%. The contribution of the agricultural sector to the GDP had remained over 40% between 2001 and 2011 with an average contribution of 41.46% within the period. Correspondingly, agricultural exports, which were the main sources of foreign exchange earnings, declined and, the dollar value of food and live animals imports increased by about Y% per annum between 2001 and 2011. On the other hand, industry's (crude oil production, mining and quarrying and manufacturing) contribution to GDP increased from about 13% in 1960 to an all time high of 30.5% in the year 2003 and then declined to about 19.2% in the year 2011. A closer examination of industry's contribution to total GDP at 1990 constant basic prices reveals that between 2001 and 2011, industry contributed an average of 25.25% with crude oil accounting for 21.07%, mining and quarrying 0.29% and manufacturing 3.9%. What industry has gained is primarily due to increase in oil production, whose contribution in industry stood at 83% on the average.



### **Key Developmental Challenges:**

**Inconsistencies in Energy Policies and Implementation Plans:** There are sub-sectoral policies in the separate energy sub-sectors, namely, electricity, oil and gas and solid minerals. There are also energy related policies developed in sub-sectors whose activities are strongly dependent on those in the energy sector. These include transportation, agriculture, science and technology and environment, among others. The sub-sectoral policies, however, reflect the individual sub-sectoral perspectives.

In order to ensure optimal, adequate, reliable and secure supply of energy to, and its efficient utilization in the country, a co-ordinated, coherent and comprehensive National Energy Policy (NEP) was reviewed with the UNDP support in 2013. The policy will serve as a blue print for the sustainable development, supply and utilization of all energy resources for a balanced energy supply mix within the economy, thereby encouraging energy diversification. To avoid policy conflicts which may, otherwise, arise, the National Energy Master Plan (NEMP) was drafted based on the 1<sup>st</sup> Edition of the National Energy Policy (NEP) approved in 2003. With the review of NEP, it is important to review and develop a new action or implementation plans for the revised NEP. The proposed National Energy Policy Implementation Plan (NEPIP) seeks to achieve the goals of the revised NEP by converting its strategies to actionable programmes, activities and projects. Moreover, it will establish the framework that allows stakeholders understand their roles in achieving the nation's energy goals for stable, reliable and diverse sources of domestic energy as specified in the National Energy Policy (NEP).

**Over-Dependence on Oil and Gas:** Over-dependence on oil has slowed down the development of alternative fuels. Diversification to achieve a wider energy supply mix will ensure greater energy security for the nation. The domestic demand for petroleum products is growing rapidly. The development of alternative fuels from locally available energy resources should therefore be vigorously pursued.

**Poor Rural Energy Access:** The rural populace, whose needs are often basic, depend to a large extent on traditional sources of energy, mainly fuelwood, charcoal, plant residues and animal wastes. This class of fuels currently constitutes about 40% of total energy consumption in the country. Fuelwood supply/demand imbalance in some parts of the country is now a real threat to the energy security of the rural communities. Hence, special attention needs to be paid to the diversification of the energy supply mix in the rural areas.

**Energy Wastages through Inefficiencies in energy Use:** Most of the limited energy generated is wasted on inefficient appliances and systems. Most Nigerians are replacing inefficient lamps like incandescent bulbs with energy saving lamps like the compact fluorescent lamps. This is facing great challenge in the handling of the damaged CFLs and the mercury being released. Most Nigerians are ignorant of the presence of mercury in the lamps and the proper way of handling them when damaged.

### **Lessons Learnt from 2013 Implementation**

The revised REMP document, being very concise and comprehensive is more accepted and is serving as a good basis for engagement with the SE4ALL process.

- SEFA represents a great opportunity to support the power and energy sector reform for Nigeria.
- SEFA provides Nigeria the opportunity to link up ongoing work on ECOWAS NMG and with global initiative for energy access and for Nigeria to demonstrate leadership
- The demand for energy saving lamps is increasing while that of the incandescent lamps is decreasing,



- Most Nigerians are not very familiar with energy saving lamps and not aware of handling procedures when damaged to avoid contacts with mercury.
- Nigerian market is a mixture of high, low and very poor qualities of CFLs
- Over 98% CFLs sold in Nigeria are imported from China
- The cheaper the CFLs, the lower the quality. Higher prices are associated with higher qualities;
- CFLs quality assurance is the highest threats to the markets

**Emerging programmatic priorities for 2014:**

- Reviewing the National Energy Policy and presenting it to the National Assembly for passage into law
- Assessing the potential of bio-degradable sources in Nigeria for bio-energy generation
- Developing SE4ALL Action Plans and ensuring full participation in the UN SE4ALL initiative
- Awareness Creation/Capacity building in critical areas – energy efficiency

**Implementation and Monitoring Arrangements:**

- Quarterly reports
- ECN Project Implementation Committee will monitor the day-to-day execution of the projects

National implementation (NIM), in close collaboration with government, civil society, the private sector and the academia has been identified as the implementation modality.

UNDP and Sokoto State will leverage on existing consultation platforms for resource mobilization, project selection, design, implementation and evaluation. UNDP will facilitate synergies between the state and federal tiers of government to enhance efficiency and build on good practices.

UNDP will strengthen engagements with Sokoto State for joint monitoring and evaluation exercises; build synergy and coordination of support in research and analysis; as a foundation for its work; and support national ownership and leadership in implementing the programme. UNDP will also seek opportunities to expand collaboration between states and regional cooperation towards development. The Harmonized Cash Transfer approach will be utilized towards strengthening operational systems.

**UNDAF Outcome 4.3:** By 2017 Nigeria's environmental vulnerability to negative effects of economic activities, urbanization and climate change is reduced through the efficient use of natural resources, a reformed regulatory framework aligned with Nigeria's international commitments, enforced at federal, State and LGA levels by strengthened institutions, private sector and populations that are environmentally conscious and taking action towards environmental sustainability.

**UNDAF Output:** 4.3.2 Environmental Institutions at Federal, State and LGA levels are capable to implement policies and enforce laws, through multi stakeholders' solutions harnessing indigenous knowledge, innovations and practices for environmental management  
**UNDAF Output:** 4.3. Initiatives for access to renewable and rural energy is promoted;

Agency Results:	Planned Activity	Time Frame				Responsible Party	Funding Source	Budget		Expenditure	Progress Towards Results			
		Q1	Q2	Q3	Q4			Budget Description	Amount					
<b>Result 1: Expanded Access to Off-Grid Renewable Energy (Solar &amp; Biomass)-Based Sustainable Energy for All in 3 Villages</b>  <b>Indicators:</b> a) Baseline data in place  b) Number of Households(HH) with Solar-PV Lighting Systems  c) Existence of 1 no. Solar-Based Water pumping system per village  d) Community Health Center equipped with Solar PV Vaccine Refrigerator+Solar light  e) Community play-grounds and major area roads lighted with Solar-PV for improved security	a) Conduct baseline Study (load demand and energy needs)  b) Procurement and Installation of Off-Grid Solar Home systems with mobile phone-charging  c) Construction of solar water borehole pump for portable drinking water  d) Design, Construction and Installation of Solar-PV in Community Health Centre or Community Hall;	X	X	X		ECN	Trac				Status of progress to target contribution to country programme outcome			
													30,000 (10,000/village)	
													60,000 (20,000/village)	
													105,000 (35,000/village)	
													45,000 (15,000/village)	



<p>f) Eco-stoves installed to replace 3-stone stoves</p> <p>g) Improved quality of life</p> <p><b>Baseline:</b> a) TBD; b) TBD; c) TBD; d) TBD; e) TBD; f) TBD</p> <p><b>Targets:</b> a) Complete baseline report b) 100HHs/village c) 1no. per village d) 1no. Health Centre equipped e) 7 nos. per village f) 100HHsper village g) Higher standard of living</p>	<p>e) Design, Construction and Installation of 7nos Solar Streetlight at strategic locations per village.</p> <p>f) Design, Construction and Installation of Clay-Based Ecostoves replaced Traditional 3-Stone Cooking Stoves in the rural village</p>								<p><b>60,000</b> (20,000/village)</p> <p><b>45,000</b> (15,000/village)</p>		
<p><b>Result 2: Community-Based SMEs powered with Renewable Energy sources (solar dryers, etc.)</b></p> <p><b>Indicators:</b> a) Baseline data in place b) Number of Farmers with Solar-Dryers c) Community Poultry Farm equipped with Solar Chicken Brooder to replace kerosene lanterns</p> <p><b>Baseline:</b> a) 0 b) TBD c) TBD</p> <p><b>Target:</b> a) Yes b) Yes c) Yes</p>	<p>a) Conduct baseline Study (load demand and energy needs of community SMEs)</p> <p>b) Design, Construction and Installation of Solar Dryers for Cassava/crops drying, Hair-Dressing and Barbing Saloons</p> <p>c) Design, Construction and Installation of Solar Chicken Brooder for a Poultry Farm in the village</p>		<p>X</p>	<p>X</p>	<p>X</p>	<p><b>ECN</b></p>	<p><b>Trac</b></p>		<p><b>5,000</b></p> <p><b>35,000</b></p> <p><b>30,000</b></p>		

<p><b>Result: 3 Approval of the Revised National Energy Policy (NEP) and National Energy Master Plan (NEMP) by FEC</b></p>	<p>a) Consultative /Inter-Agency Meetings on NEP/NEMP's Approval</p>						<p>ECN</p>	<p>Trac</p>	<p>20,000</p>		
<p><b>Indicators:</b>  a) Printed copies of Revised NEP and NEMP  b.) Minutes of Meetings  c) Copy of Memos to HMST and FEC  d) Passage of Memos to FEC  e) Approval by FEC</p> <p><b>Baseline:</b> a) Yes b) Nil c) Nil d) Nil e) Nil</p> <p><b>Target:</b> a) Yes b) Yes c) Yes d) Yes e) Presented to FEC for approval</p>	<p>b) Preparation of Memo for the approval  c) Advocacy Forum on the NEP and NEMP  d) Courtesy visits to Honourable Ministers</p>										
<p><b>Result 4: SE4ALL Investment Prospectus (SIP) and Action Plan (SAP) produced</b>  <b>Indicator:</b> Draft SIP and SAP produced  <b>Baseline:</b> None for now</p>	<p>Preparation SE4ALL Action Plan and Investment Prospectus</p>		<p>X</p>	<p>X</p>	<p>X</p>	<p>ECN</p>	<p>Trac</p>		<p>80,000</p>		
<p><b>Result 5: Green House Gases (GHGs) Inventory Laboratory at FMEEnv. Powered with Solar-PV</b></p>	<p>a) Conduct Energy Audit to determine baseline load demand  b) Design, Construction and Installation of</p>		<p>X</p>	<p>X</p>	<p>X</p>	<p>ECN</p>	<p>Trac</p>		<p>70,000</p>		



	Solar P.V;																		
	c) O & M Training for FMEHV's Staff																		
<b>TOTAL</b>																			<b>585,000</b>