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ANNEX

of the Commission Decision on the Annual Action Plan 2016 - Part 2 in favour of The Republic of Zambia to be financed from the 11th European Development Fund

Action Document for "Lusaka Transmission Distribution Rehabilitation Project – Low Voltage Distribution Network"

INFORMATION FOR POTENTIAL GRANT APPLICANTS

WORK PROGRAMME FOR GRANTS

This document constitutes the work programme for grants in the sense of Article 128(1) of the Financial Regulation (Regulation (EU, Euratom) No 966/2012), applicable to the EDF in accordance with Article 37 of Regulation (EU) 2015/323 in the following section concerning calls for proposals: 5.4.1. "Grants: call for proposals – Support to MSEs and Women Empowerment (direct management)"; and in the following section concerning grants awarded directly without a call for proposals: 5.4.2 "Grant: direct award: Subsidised individual connections to households, public institutions and MSEs (direct management)".

1. Title/basic act/ CRIS number	Lusaka Transmission Distribution Rehabilitation Project (LTDRP) – Low Voltage Distribution Network CRIS No: ZA/FED/038-238 financed under the 11 th European Development Fund	
2. Zone benefiting from the action/location	Eastern and Southern Africa & the Indian Ocean, Zambia The action shall be carried out at the following location: Lusaka Province, Zambia	
3. Programming document	11 th European Development Fund, National Indicative Programme (2014-2020) for co-operation between the Republic of Zambia and the European Union.	
4. Sector of concentration/ thematic area	Energy; Improved access to clean, reliable and affordable energy	DEV. Aid: YES ¹
5. Amounts concerned	Total estimated cost: EUR 80 200 000 Total amount of EDF contribution: EUR 65 000 000 This action is co-financed by potential grant beneficiaries for an indicative amount of EUR 200 000. This action is co-financed in joint co-financing by ZESCO Limited for an amount of EUR 15 000 000	

¹ Official Development Aid is administered with the promotion of the economic development and welfare of developing countries as its main objective.

6. Aid modality and implementation modalities	Project Modality Direct management: Grants - call for proposals, Grant - direct award, and Procurement of services Indirect management with the Government of the Republic of Zambia.			
7. a) DAC code(s)	Main DAC code – 23010 Energy sector Sub-code 1 – 23040 – Electrical Transmission/distribution – 100%			
b) Main Delivery Channel	Public Sector – 12000			
8. Markers (from CRIS DAC form)	General policy objective	Not targeted	Significant objective	Main objective
	Participation development/good governance	X	<input type="checkbox"/>	<input type="checkbox"/>
	Aid to environment	<input type="checkbox"/>	X	<input type="checkbox"/>
	Gender equality (including Women In Development)	<input type="checkbox"/>	X	<input type="checkbox"/>
	Trade Development	X	<input type="checkbox"/>	<input type="checkbox"/>
	Reproductive, Maternal, New born and child health	X	<input type="checkbox"/>	<input type="checkbox"/>
	RIO Convention markers	Not targeted	Significant objective	Main objective
	Biological diversity	X	<input type="checkbox"/>	<input type="checkbox"/>
	Combat desertification	X	<input type="checkbox"/>	<input type="checkbox"/>
	Climate change mitigation	<input type="checkbox"/>	X	<input type="checkbox"/>
	Climate change adaptation	X	<input type="checkbox"/>	<input type="checkbox"/>
9. Global Public Goods and Challenges (GPGC) thematic flagships	Sustainable Energy, component 1.1: Increased access to sustainable energy/renewable energy/energy efficiency, incl. rural electrification			
10. United Nations Agenda 2030 and Sustainable Development Goals (SDGs)	Main SDG Goal - SDG 7 "ensuring access to affordable, reliable, sustainable and modern energy for all". Secondary SDG Goals– SDG 1 "Ending poverty in all its forms everywhere" and SDG 5 "achieve gender equality and empower all women and girls".			

SUMMARY

The action entitled "Lusaka Transmission Distribution Rehabilitation Project (LTDRP) – Low Voltage Distribution Network" addresses the current power network capacity and access affordability challenges and aims to increase access to clean, reliable and affordable energy and renewable energy in Zambia by improving electricity transmission and distribution in urban and peri-urban low income high density areas of the capital city. It complements a wider LTDRP project which will see the expansion of distribution lines and construction of additional 132kV transmission lines to strengthen the existing power distribution network within the city of Lusaka, for which loans from the World Bank and European Investment Bank has been secured for a total amount of USD 251 million.

The support to be provided by this action encompasses low voltage network rehabilitation, connection-fee subsidy for beneficiaries in the targeted low-income areas and economic empowerment through facilitated access to micro-credit support to Micro and Small Enterprises (MSEs) and women to promote the use of electricity for economic purposes. Network rehabilitation component will be implemented in indirect management with the Republic of Zambia. Individual household connections will be implemented in direct management through a grant to ZESCO Limited. Call for proposals in direct management will apply for the implementation of support to MSEs and women empowerment.

The intervention is in line with government's agenda, the Revised-Sixth National Development Plan 2011-2016 (R-SNDP), to ensure improved livelihood and opportunities for increased access to electricity services for all, especially the vulnerable, poor and women. It also supports the objectives of the UN Sustainable Energy for All (SE4All) initiative which focuses on providing access to sustainable energy services to poor people in developing countries as well as objectives of Agenda 2030 (SDG 7 and, indirectly, SDG 13). Furthermore, the action will support the implementation of the European External Investment Plan (2016) which focuses on socio-economic sectors and in particular infrastructure, including energy, and providing finance in favour of micro-small and medium-sized enterprises with a particular focus on job creation.

1. CONTEXT

1.1 Sector/Country/Regional context/Thematic area

Zambia is located in the heart of Central Africa, land-locked with an estimated population of 14.5 million people as at 2013 and a country GDP (Gross Domestic Product) of USD 26.8 billion. The average population growth rate for the period 2010–2015 was 3.2% with the urban population areas having an average 4.2% growth rate per annum. The average population density is 18.7 per square kilometre and the country has been attaining an average GDP economic growth rate of 6.4% in the last decade. The country attained a middle income status in 2011 with the largest population concentrated along the line of rail (north to south) however, the gap between the urban and rural poverty levels continues to widen².

The country is well-endowed with a wide range of indigenous energy resources, particularly coal and renewable sources of energy such as hydropower, solar, wind and geo-thermal of which only a limited percentage is being used for electricity generation. Hydropower accounted for more than 99% of the electricity generated in the country in 2012 and 2013, while the mining industry and domestic customers respectively accounted for 55% and 31% of the electricity consumed, other consumer are government services, industry and commerce and agriculture and forestry. In 2013, the national power consumption reached 10 845 GWh versus a generation of 13 300 GWh³. However, due to the acute energy crisis which emerged in mid-2015 resulting from the poor rainfall and inadequate investment in generation projects, Zambia is currently facing a considerable deficit of power generation which may continue in the coming years despite new power plants commissioned in 2016 and enhanced power import. Although the Government intends to adopt a fully cost reflective pricing system to attract new investments, the issue is very politically sensitive. For example, the price revision announced in December 2015 for domestic customers was reversed in January 2016 after considerable complaints from the general public.

² World Bank Country Profile.

³ Energy Regulation Board, 2012-13 Sector Report.

Lusaka is the capital city of Zambia and one of the fast growing economic hubs whose 'suppressed' electricity demand recorded in 2011 was approximately 470MVA⁴. The city has seen a historical 6% average load growth rate in the past 10 years which is likely to continue in the medium term. Being an administrative and economic hub, the city of Lusaka has experienced unprecedented major residential and economic developments in the recent past which has put a lot of stress on the existing constrained power network that has not had major rehabilitation and/or repair works to keep it in line with the ever increasing demand for electricity services. Despite some limited rehabilitation and reinforcement works carried out on the network in 2003 with the support of the World Bank, the increased distribution demand can no longer be supplied from the existing 132kV back-bone line, the system has lost the firm supply criterion and the lines are fast approaching their thermal limit of the current carrying capacity, resulting in periodic load shedding in high density areas.

1.1.1 Public Policy Assessment and EU Policy Framework

Under the long term **Vision 2030**, Zambia aspires to become 'a prosperous middle-income nation' providing opportunities for improving the wellbeing of all its citizens by implementing a number of development goals centred on social and economic development and poverty reduction. Vision 2030 identifies energy as “one of the important driving forces behind development”, with the objective of "universal access to clean, reliable and affordable energy" by 2030. Government aims in the long term to increase national electrification levels from 25% in 2010 to 66% by 2030, with 90% and 50% respectively for urban and rural areas.

The **Revised-Sixth National Development Plan 2011-2016 (R-SNDP)** also aims at accelerating growth and improving livelihoods of the Zambian people particularly in rural areas. The R-SNDP identifies energy as one of eight sectors that are vital to attaining its objectives of promoting jobs, growth, and human development. It also outlines Government commitment to increase electricity generation from 2 GW to 3.1 GW and national access to electricity from 25% to 30% by 2016.

The National Energy Policy (NEP) of 1995 (Revised in 2008) sets the Government's agenda on the role and priorities of the energy sector in national development. The NEP among its objectives aims to increase access to energy services and also to promote renewable energy, energy conservation and efficiency. The NEP also recognizes gender issues as one of the challenges but not much attention is given to it in terms of a strategic direction to take. However, **the National Gender Policy** (2014) takes note that the concentration of the provision of energy for industrial development has been at the expense of domestic use and this has ultimately disadvantaged women especially in rural and peri urban areas. Women are still overburdened with unreliable, unhealthy and usually cumbersome means of acquiring energy for domestic use which deprives them of opportunities to develop small businesses and from creating better educational conditions for children.

In order to meet the objectives of the NEP, the Government has developed the **Power System Development Master Plan (PSDMP)** and the **Rural Electrification Master Plan (REMP)**. The PSDMP formulates the power systems development master plan up to 2030, coordinating generation, transmission and interconnection plans for the sole purpose of attaining a stabilized supply of power within the country and the neighbouring Southern African region. Arising from the recommendations of the PSDMP, the Government through the support of the World Bank developed a long term (20 years) Network Master Plan for the Transmission and Distribution network within the greater city of Lusaka, on which the **Lusaka Transmission and Distribution Rehabilitation Project (LTDRP)** is anchored.

⁴ Aurecon final report; 2013.

The **National Indicative Programme (NIP) for the 11th European Development Fund (EDF)** for the period 2014 to 2020, agreed between the European Union (EU) and the Government of Zambia seeks to support the Government to attain equitable and sustainable growth anchored on principles of good governance mutually enshrined in the Vision 2030 and consistent with the Cotonou Agreement. The NIP recognises three key sectors of cooperation namely, (i) Energy, (ii) Agriculture and (iii) Governance. Interventions in the energy sector will aim at "improving access to clean, reliable and affordable energy for all by ensuring the maintenance and increase of the country's power generation capacity; upgrading and extension of the electricity distribution network to reduce transmission losses and connection of low-income households; improvement of policies and performance of energy institutions". More specifically, the NIP foresees the following outputs which are in line with the project rationale:

- Output 3A: Distribution network reinforcement, upgraded and expansion in order to provide clean, reliable and affordable energy. Interventions will further result in improved safety of the distribution network, reduced distribution system losses would, in turn, make the provision of energy services cost effective.
- Output 3B: Low-voltage connections of low-income households and of micro, small and medium enterprises to electricity.

1.1.2 Stakeholder analysis

In general, four main groups of stakeholders can be identified that will play a role and/or benefit under this project, namely:

- General public – existing and prospective customers (residents, MSEs, social institutions) who will gain access to electricity and benefit from information and awareness campaigns for the connection-fee subsidy to be provided;
- Public institutions responsible for the development and implementation of energy sector policies and programmes (Ministry of Energy and Water development, MEWD; Energy Regulation Board, ERB – approves tariff adjustments and connection fees) and city spatial development (Lusaka City Council, LCC – will confirm the legality of households considered for connections);
- ZESCO - public electricity utility responsible for generation, transmission, distribution and supply of electricity in the country: will be the implementing agency for the project and benefit from an increased customer base;
- NGOs advocating gender balance in energy policy formulation and implementation;
- Cooperating Partners facilitating increased access to clean, reliable and affordable energy within Lusaka (World Bank (WB) and European Investment Bank (EIB)).

1.1.3 Priority areas for support/problem analysis

Lusaka city is a major administrative and economic hub centrally located in Zambia and the entire region, with an estimated population of 2.2 million and an average growth rate of 4.7% per annum according to the 2010 country-wide population census. It is estimated that more than 65% of the population have access to electricity services (at present approximately 1.4 million people)⁵. The city has seen large-scale residential, commercial and industrial developments in the recent past which have resulted in increased demand for electricity services. According to ZESCO Limited's customer base figures dated 31/08/2012, the electricity consumption rate stood at 2 593GWh per annum, having an average growth rate of 3.6% per year and projected to reach 3 691GWh per annum by 2022. The total customer base as at April 2016 stood at 297 340 of which the residential customers account for over 50% while industrial and commercial,

⁵ World Bank, Report No. 77027-ZM.

agricultural and social services account for the rest, with an estimated annual growth rate of 3.51% and 4.62% for the low and high scenarios respectively in the next 20 years.

The transmission network in Lusaka is supplied by two main supply substations, Leopards Hill in the east and Lusaka West which feed/supply the three main bulk supply points (BSPs) in Roma, Coventry and Waterworks. The BSPs supply the 33kV distribution substations throughout the area, which in turn supply the 11kV overhead distribution network. The 400V low voltage distribution network receives its supply from the 11kV distribution network by means of step-down transformers located at various points in the network. The entire 132, 88, 33 and 11kV transmission and distribution networks with associated BSPs, substations and transformers will be rehabilitated, strengthened and expanded under the LTDRP financed by the World Bank, EIB and ZESCO, which will in turn make available the estimated 1300MVA installed capacity at 132kV for further distribution to customers in the various city areas under this project.

The major challenges currently affecting the low voltage distribution network are:

- a) Low network capacity and reliability,
- b) Increasing population in the city without access to electricity services,
- c) High energy losses (22% in 2012) on the distribution network, and
- d) Persistent load shedding at peak hours in high density areas.

A recent preliminary study done in 2013 by M/s Aurecon, contracted by ZESCO to design and develop the LTDRP project for onward financing and implementation has shown that significant network rehabilitation, expansion and reinforcement are required at both transmission and distribution levels to adequately support the existing and forecast medium and long term demand arising from increased consumption from existing and new customers. The increase in demand for electricity services can also be attributed to an increase in the connection rate in the Lusaka area. ZESCO Lusaka division is on average connecting around 28 000 additional customers per annum⁶. According to ZESCO Limited reports, the demand for household connections is increasing as can be observed from the number of individuals applying for the service. Latest figures available from the ZESCO institutional capacity assessment study done in June 2016 indicate that ZESCO receives on average 4 800 new connection applications per month of which about 3 600 are surveyed and some 2 000 connected. This implies that on a monthly basis, there is a back-log of 1 200 surveys and 1 600 surveyed connections not connected.

The benefits of interventions on the WB-EIB-ZESCO funded LTDRP, providing capacity reinforcement and expansion at 132kV down to 33kV and 11kV distribution network, will only be meaningful to ZESCO and the customers in Lusaka city at large if the low voltage distribution network, commonly referred to as the 'Last Mile', needs are addressed, that is, the existing 400V low voltage distribution network which is currently overloaded and inadequate is rehabilitated and expanded so that the increased capacity of 1300MVA at 132kV made available under the project is effectively distributed with minimum system losses down to the envisaged consumers⁷. Overall, the larger LTDRP project will result in an anticipated increase in sales in the retail segment of energy for ZESCO Limited in Lusaka from the current 2 593 GWh/year to 3 691 GWh/year by 2022. Furthermore, transmission and distribution network upgrading at 132kV and 400V respectively is expected to reduce the total system losses from the current 22% to 17% by 2020, leading to significant energy savings⁸.

The 'Last Mile' section of the larger LTDRP which is to benefit from the EUR 65 million EDF grant and EUR 15 million additional joint co-financing to be made available by ZESCO Limited should effectively link the outcomes of the WB-EIB-ZESCO funded LTDRP to the 400V low

⁶ World Bank, Report No. 77027-ZM.

⁷ Aurecon draft final report, Feb 2013.

⁸ World Bank Report No. 77027-ZM.

voltage network, providing clean, reliable and affordable energy to both existing and new consumers which is in line with the expected outcomes in the NIP.

In order to achieve the intended results under the entire LTDRP project, the following scope of works is foreseen:

- Investment package on the high and medium voltage grid financed by the WB-EIB-ZESCO;
- Access Component (Last Mile) to be funded by the EU and ZESCO Limited consisting of three components as described in 4.2.

The project is targeted at **high density, low income peri-urban areas** in Lusaka. A total of 26 potential project areas were identified based on the Lusaka City Council provided list for all *decelerated and formalized high density, low income* areas, known as "Compounds" as documented in the "Write-up on Lusaka's Unplanned Peri-Urban Settlement" (2007; updated 2010). Several visits to potential target areas confirmed that all residents shared more or less the same (low) social-economic status/ standards. People who are slightly wealthier choose to move to middle-income areas for better quality of life, higher social status and better services and infrastructure. These areas are **legally demarcated settlements** (pre-conditions for project support).

All the potential project target areas earmarked to benefit from the connection-fee subsidy are generally deprived of the following:

- Access to clean drinking water and good sanitation (no toilet within/by the house);
- Employment: majority of household heads are unemployed or unpaid family worker;
- Incomes: majority of household heads' incomes are well below the basic needs basket of ZMW 4 278 per month (as defined for a 5-person household within Lusaka, March 2016);
- Electricity: households mainly depend on wood-fuel and charcoal as means for cooking and candles for lighting;
- Housing: poor quality and small housing units constructed of cheap building materials, some of which are not ventilated;
- Education: a larger number of household heads and other family members have no formal education.

Thus, it is evident that the project potential target areas are all considered "poor" and thus eligible for the pro-poor support. Moreover, given the lack of meaningful tools to verify socio-economic circumstances of individual households, it is assumed that everybody living within these identified compounds will be in principle eligible to apply for a subsidised household connection under this programme provided that:

- a) the technical requirements and preconditions as provided under this project have been met (such as the existence of a robust ZESCO network nearby, etc.), and
- b) the applicant fulfils all the necessary requirements for ZESCO's application process (proof of legal ownership of plot/premises, payment of subsidised fees, approved internal wiring, etc.).

The above proposed criteria is reasonable as it offers a household selection process which reduces political and intra-community tensions as well as risk of favouritism in selecting final beneficiaries.

While all 26 listed compounds are equally eligible for pro-poor support, a further ranking was necessary to identify priority areas where the "enabling works" (construction of new 11 kV and 400V lines, transformers, rehabilitating of existing lines, etc.) are necessary and should be

prioritized. This ranking has been based on *the number of un-electrified housing units in each compound and percentage of un-electrified housing units*. These two criteria⁹ ensure that areas with a high demand for new connections are targeted and a pro-poor dimension is maintained as the rate of electrification is an indication of the poverty level in the project target areas.

Further prioritization was done by checking and confirming that the proposed priority areas are:

- Well-matched with the implementation phases and indicative schedule¹⁰ of the WB-EIB-ZESCO funded LTDRP, since this project is supposed to connect to the switching-stations provided by the LTDRP;
- Compatible with the Lusaka City Council's Settlement-Upgrading strategies, e.g. the Participatory Slum Upgrading Programme (PSUP, launched 2008) and the "Lusaka City Wide Slum Upgrading and Prevention Strategy"¹¹.

This priority ranking yielded a list of ten target areas (Mandevu, Kanyama, Ngwerere, Mtendere East, Nkoloma, Garden, Chawama, John Howard, Kalingalinga and Chainda) that give a potential demand of more than 100 000¹² connections following the above technical criteria. It is assumed that at the time of project implementation, the actual demand will be significantly higher since the population (and numbers of houses) in these areas is growing at a fast rate. This priority ranking for implementation of enabling works serves as a guideline, in practice the project may be implemented in several areas parallel, which also depends on external factors, such as the increased demand from the beneficiaries (poor households) and/or the progress of the overall LTDRP implementation.

Regarding formally registered or informal Micro Small Enterprises (MSEs) within the project target areas, it has been decided to follow similar principles as the ones adopted under the World Bank funded Global Performance Output Based Aid (GPOBA) project. This programme uses a list of eligibility criteria for MSEs to benefit from subsidised connections to be field-tested in the coming months. These criteria have to do with the following factors: location in the project area and proximity to the MV backbone line as well as LV grid (not more than 30m), size of premises (16m²), the declared demand should not exceed 15kVA or should be 60A single phase restricted and special emphasis and support shall be given to women-headed businesses through facilitation of business related training and access to credit facilities offered by financial institutions. It has to be understood that the vast majority of MSEs in the project target areas are informal non-registered businesses 'done from home' or along the roadside.

Also eligible will be communal customers, projects and social/public infrastructure, such as pumps for communal boreholes, lighting for market areas, etc. Larger commercial enterprises which do not fulfil the criteria listed above can get connected by ZESCO provided they are able to pay the full cost and not the subsidised ZESCO connection fee.

Regarding willingness to pay for electricity units, the random willingness to pay survey carried out in May 2016 in three potential project areas demonstrated that the average costs for alternative sources of energy being spent by non-connected households per month (ZMW 269.0 - charcoal, candles, batteries, kerosene) are considerably higher than the average costs for grid-supplied electricity for connected households (ZMW 74.5). Also the social/gender analysis undertaken during the formulation phase in three target areas (Chawama, Mtendere East and N'gombe) has shown that a combined total of 67% of the people interviewed were willing and able to pay more than ZMW 150 for the connection fee and 87% were willing to pay between

⁹ Data provided by the 'Aurecon Report'.

¹⁰ Update data and schedule provided by ZESCO in May 2016.

¹¹ Lusaka City Council with the support of UN-HABITAT (March 2015).

¹² Based on 2015 housing data.

ZMW 50 and ZMW 200 per month to stay connected to electricity services as contrasted to 13% willing to pay below ZMW 50. The majority of surveyed households also expressed an intention to buy an electric cooker once connected. From the foregoing, it can be concluded that there is considerable willingness to pay for the electricity services by potential new customers. Although it can be assumed that access to electricity significantly reduces the use of charcoal as a source of energy, this assumption is very hard to prove because many factors come into play, such as the cultural and economic norms of a society. It should be acknowledged, however, that the long term tendency in other countries shows gradual shifts towards the use of modern energy services.

To ensure equal opportunities for all interest groups to benefit from the connection fee subsidy, access to information will be vital. Generally, the population in the target areas is underprivileged, thus the information gap will have to be addressed if equal access to electricity services for all is to be attained. Based on a random sample done in three project target areas (Chawama, Mtendere East and N'gombe), it can be observed that some 57% of non-connected households are women-headed, a total of 41% of the household heads are widowed or divorced and an additional 10% are single. Furthermore, the social-gender study undertaken during the formulation phase also revealed that only 37% of the household heads were in formal employment with 24% having a monthly income of not more than ZMW 1 000 (equivalent to EUR 80). Out of those people interviewed, a total average of 26% (mostly women) were running a small business venture and the rest were hopeful that they could start up a business to support household income but lacked appropriate education and training in business and inadequate capital. The above findings point to the fact that the population within the project catchment areas is of low social and economic status and women are largely underprivileged. Thus, it is foreseen that providing these communities with electricity services, coupled with access to other social facilities, will go a long way to addressing the social-gender imbalance and ensure that they have a better social-economic wellbeing. This programme will support beneficiary MSEs and women facilitating linkages with financial institutions (access to credit lines for existing and start-up business), and other cooperating partners' with programmes supporting women empowerment, ensuring women are empowered to meaningfully contribute to improved household income and better social living conditions for their immediate families. The programme supporting MSEs and women empowerment will also facilitate training to targeted credit beneficiaries in financial literacy and business management/entrepreneurship that will effectively enhance the sustainable management of their businesses.

The social-gender survey carried out during the formulation phase has also drawn conclusion that 40% of those interviewed were females who have only attained basic primary school education and 25.7% have never received any form of formal education which includes groups like the elderly. In order to ensure access to electricity for all and a gender sensitive approach during the implementation of the programme, ZESCO Limited's Corporate Affairs and Business Development Directorate will need to conduct various community tailored awareness programmes for each areas using various communication methods (door-to-door, drama & community shows, etc.) in the project areas to sensitise and inform the communities on the project benefits and their respective responsibilities. The campaigns will cover a range of subjects such as, but not limited to, : efficient and productive use of electricity, alternative and efficient cooking methods, safe disposal of light bulbs, HIV/AIDS awareness, gender-based violence, combating vandalism of electricity infrastructure and benefits of women empowerment at household level. Also, ZESCO staff will support the less privileged in completing the electricity application forms and assist in ensuring that the certificate of ownership of land/plot for an individual applicant is issued timely by Lusaka City Council (LCC).

The potential challenge of the legality of the land on which properties (houses) have been built has also been investigated. All project areas earmarked to benefit from this intervention have been classified as '*legally demarcated settlements*' (a pre-requisite for ZESCO to connect

electricity) by the LCC. The LCC, through its City Planning and Housing and Social Services departments, is yet to provide basic social services (road access, water and sanitation) and allocate residential address numbers. The Product Security Department (PSD) within ZESCO with the support of the City Planning Department will closely monitor and mitigate the possible connection of illegal structures in the project targeted areas. The role of the LCC will be to verify and issue a confirmation of ownership and legality of land to an applicant who in turn submits the documentation to ZESCO together with the electricity application form. This '*modus operandi*' will ensure that illegal connections are avoided. The PSD also curbs illegal connections (theft) in the low voltage network by implementing a number of measures e.g. regular controls and audits especially on all maximum demand clients ring fencing losses to the smallest locality, introducing pre-paid metering/billing system. In addition, the new installations that will be provided under the project will be built using the Aerial Bundled Conductor (ABC) which makes it very difficult to make illegal connections to overhead lines and service cables, so that energy losses due to illegal connections in the project areas will be minimised.

With regard to ZESCO's overall capacity to implement the project, on the basis of recent experience as well as the World Bank LTDRP project appraisal document, it can be stated that ZESCO has an extensive experience in implementing donor funded programmes and has sufficient institutional (including financial, technical and procurement aspects) capacity to handle the proposed 11th EDF action including the rehabilitation of the low voltage network under indirect management (as implementing agency) as well as the connections component under direct management (direct grant to ZESCO as monopoly service provider). ZESCO is targeting ISO accreditation by 2017 which will improve quality assurance in all its operations including project implementation, procedures, controls and policies. This capacity has been confirmed by an additional project specific institutional assessment performed during formulation phase and will be further enhanced by additional mitigation measures proposed, such as external consultant to support the procurement and supervision of works, dedicated Project Implementation Unit (PIU) within ZESCO to manage the project and, possibly, outsourcing of connection services to external engineering firms as is already practised by ZESCO. However, some weaknesses identified during the capacity assessment (e.g. insufficient planning capacity, financial reporting, and deficiencies in the customer database) will be addressed before the commencement of the proposed action through training and capacity building using short-term experts financed under the Technical Cooperation Facility (TCF) targeting PIU seconded staff and other directorates within ZESCO Limited.

2 RISKS AND ASSUMPTIONS

Risks	Risk level (H/M/L)	Mitigating measures
1. Failure to implement the LTDRP financed by other donors (World Bank & EIB).	L	Continued dialogue with donors financing the back-bone LTDRP. First phases of this project are now under procurement.
2. Insufficient power production due to recurrent drought (low water levels in generation plants every 7-10 years).	L/M	Government to monitor climate change effects on power generation and provide alternative energy sources to mitigate the situation. Other non-hydro generation projects under development.

3. Lack of ZESCO's capacity to provide connections to targeted population.	L	ZESCO gained sufficient experience and has dedicated teams who operate in different zones of the city or may outsource some of the activities related to connections. Training to be provided to ZESCO staff in planning before commencement of the project. ZESCO is in the process of procuring bulk quantities of pre-paid meters for prospective customers.
4. Tensions with some local residents or communities affected (erratic power supply, demolition of existing structures) by the network upgrade leading to implementation delays.	L	ZESCO to monitor situation closely and sensitise local community to be affected by the upgrading works. No land acquisition or compensation is foreseen by ZESCO.
5. Non-regularized status of land upon which houses are built. Losses due to illegal connections.	L	ZESCO with the support of Lusaka City Council (LCC) to confirm/verify the legal status of settlements and buildings (household) proposed for connection. Administrative and technical measures to curb illegal connections in place.
6. Displacement of current tenants especially women due to increased rentals by landlords resulting from electrification.	L/M	Awareness campaigns to also target landlords and EU Delegation to monitor this risk under the social/economic survey throughout project duration.

Assumptions:

1. Completion of transmission & distribution lines under the LTDRP project

The completion of the back-bone LTDRP transmission and distribution network will be successful and timely and the expected load of 13 000MVA is made available at 132, 33 and 11kVA lines for onward distribution to the 400V low voltage distribution network.

2. Loan financing

Loan financing conditionalities relating to World Bank and EIB funds secured by the Government for the LTDRP will be successfully met by the Government and disbursement of funds will be timely and as agreed in the loan agreements.

3. Adequate income

Low income households will have adequate income to be able to pay for electricity services when electricity tariffs are adjusted upwards. Based on the social/gender survey done during the formulation phase for this action, all the surveyed households declare their ability to pay for units based on their current incomes, well above the average energy consumption in the low income areas.

4. Connection fee subsidy

Potential consumers estimated at 63 000 (households, social amenities and MSEs) will be able to afford the connection fee levied by ZESCO with the support of the subsidy made available under this programme.

5. EIB additional loan financing

The additional loan financing amounting to EUR 15 000 000 to be made available by the EIB will be finalised with the Government as soon as possible and before the signature of works contracts at the latest.

3 LESSONS LEARNT, COMPLEMENTARITY AND CROSS-CUTTING ISSUES

3.1 Lessons learnt

ZESCO and Rural Electrification Authority (REA) with the support of Cooperating Partners (JICA, World Bank & EU) have implemented a number of activities under the Increased Access to Electricity Services (IAES) project from 01/2009 to 06/2015. The IAES project has provided a number of lessons including the need to subsidise the cost of connection fees charged by ZESCO to enable more new customers to get access to electricity. Another factor attributed to the success of this project was linked to a dedicated Project Implementation Unit (PIU) managed by ZESCO seconded staff monitoring and implementing the individual connections under a connection fee subsidy programme. On the other hand, the EU/ACP energy facility funded grid extension project in Kaoma (Western Province) and Mumbwa (Central Province) districts in Zambia which was completed end 2015 showed that more innovative ways to help low income communities' access electricity need to be put in place, such as spreading the connection fee over a longer period of time.

The Demand Side Management (DSM) programme being implemented by ZESCO has resulted in significant energy saving and reduction in power demand due to introduced incentives for efficient energy equipment like solar batteries, compact fluorescent lamps (CFLs), power factor correction equipment and capacitor banks. Within this programme ZESCO have distributed over 1.6 million CFLs to residential clients as a way of supporting efficient lighting methods resulting in an estimated power saving of 100MW.

3.2 Complementarity, synergy and donor coordination

The Cooperating Partners (CPs) in the energy sector are committed to support the Government's efforts in scaling up access to clean, reliable and affordable electricity services. The key CPs in the sector are Japan/JICA, Sweden and the World Bank, the African Development Bank (AfDB), EIB, Agence Française de Développement (AFD) and Kreditanstalt für Wiederaufbau (KfW). Regular coordination meetings at technical level amongst the CPs and with the Government of Zambia are held, with the EU Delegation being the Chair for the group since June 2014. In addition, due to acute energy crisis which started mid-2015, a number of CPs have decided to step up their support to the sector and coordinate their activities better. To this end, a Joint Declaration on cooperation on energy has been proposed to the Government as a platform for an enhanced policy dialogue. This Joint Declaration has been cleared by the Government and should be signed in the near future.

Under this particular project, provision and access to clean, reliable and affordable electricity services will complement the following initiatives from other CPs:

- The above mentioned IAES project under which the grid was extended in some provinces and service connection fees were subsidised to enable more than 85 000 connections as opposed to the originally targeted 51 000 households (a total of 51% of the direct project beneficiaries were women).
- World Bank with the support of Sweden is financing the electricity access for low income households in Zambia programme under the Global Partnership on Output Based Aid (GPOBA) initiative until 2017. A total of 38 000 (initially targeted 22 000) low income households have benefitted from this programme and an estimated 5 000 Micro and Small Enterprises (MSEs) are yet to benefit (ZESCO will commence the connections in July 2016) through the use of targeted subsidies in a gender-sensitive and socially inclusive manner.

- DFID is financing the Private Enterprise Programme-Zambia (2013-2018), a GBP 14 million, five-year project that aims to build and strengthen the capacity of Zambian micro, small and medium enterprises in the private sector to create jobs and contribute to economic diversification while the Swedish Embassy is preparing a project that will focus on women's economic empowerment.

3.3 Cross-cutting issues

Gender, Health, Education, Social and Economic Wellbeing

The communities in the project target areas (especially women and girls) are exposed to various hazardous/dangerous environments (indoor pollution, unsafe cooking areas and poor social services). It is expected that access to clean, affordable and efficient energy will greatly provide improved quality of healthcare services, education, social status and economic outlook of the project target areas. According to a social-gender survey carried out in three project areas, 26% of the households (mostly women) in the target areas are linked to some small business ventures (barber shop, vegetable stall, hair salon, repair-shop, etc). Thus, access to electricity coupled with access to credit lines/capital and sufficient training in financial literacy and business management/entrepreneurship (especially women empowerment) to be implemented under this programme will provide economic opportunities (extended business hours, business diversification, safe trading areas) for beneficiary MSEs and women within the project areas to positively impact the communities and increased income at household level, thereby supporting a better livelihood for the individual families.

Furthermore, a significant part (31%) of the country's energy consumption is consumed by households, mostly for domestic activities performed by women. An increase in the cost of alternative cooking fuel and load shedding instituted by ZESCO has a negative impact on women especially on their cooking activities and on those operating small businesses. Access to clean energy services may result in new opportunities for women offering them more time for gainful activities at home or for commerce related activities and education. The social-gender random survey in potential project areas conducted shows that 57.4% of non-connected households were women-headed (divorced, widowed or single) which is higher than the national average of 26% as recorded by Zambia Gender Energy Network (ZGEN). The above statistics suggest that women continue to face certain difficulties/challenges in getting access to electricity services.

According to the Human Development Report 2015, Zambia has a gender inequality index (GII) value of 0.587 reported for 2014 as compared to 0.623 and 0.627 for 2012 and 2011 respectively. The GII continues to show that levels of inequality between men and women have not reduced greatly to ensure women have equal opportunities in social and economic aspects. A sensitive social-gender approach foreseen in this action will greatly contribute to narrow the social-economic inequality gap between men and women.

Latest HIV/AIDS national prevalence rate stands at 15% among females and 11% among males. The project area of Lusaka has a prevalence rate of 16.3%. Bearing in mind the nature and complexity of this project, it will involve the exposure of the settlements to more affluent citizens, i.e. workers that will be involved in the implementation of the project. To mitigate potential negative impact of this exposure, it is recommended that ZESCO Limited staff from respective departments that will be involved in this project to be trained in HIV/AIDS mainstreaming and also ensure that this component is included in all works contracts.

Environment

Electricity to be distributed to the targeted population will be transported and consumed in an environmentally friendly manner, with a potential effect of limiting the use of wood fuel in

domestic activities at household level thus contributing to lower polluting emissions and, possibly, reduced pressure on forest resources and emission of greenhouse gases which contribute to global warming.

However, considering that the LTDRP will have some environmental and social impact on the beneficiary communities¹³, ZESCO has put in place an Environmental and Social Management Plan (ESMP) that will minimise and mitigate the environmental and social challenges. The ESMP will follow on the Environmental Impact Statement (EIS) recommendations. In addition, ZESCO will also appoint an Environmental Coordinator (ECO) to take care of environmental and social issues during construction and project implementation who will be responsible for monitoring compliance with all the mitigation measures outlined in the Environmental and Social Impact Assessment (ESIA).

Safe disposal and recycling of waste or polluting elements associated with the rehabilitation works or households connections (e.g. bulbs, batteries) will also be given due attention during implementation. It is expected that Lusaka City Council and ZESCO will receive some training on these issues within another 11th EDF project: Support to the Energy sector in Zambia - Increased Access to Electricity and Renewable Energy production (currently under approval).

4 DESCRIPTION OF THE ACTION

4.1 Objectives/results

This programme is relevant for the Agenda 2030. It contributes primarily to the progressive achievement of Sustainable Development Goal (SDG) target 7 "ensuring access to affordable, reliable, sustainable and modern energy for all", but also promotes progress towards Goals 1 "Ending poverty in all its forms everywhere" and 5 "achieve gender equality and empower all women and girls". This does not imply a commitment by the country benefiting from this programme.

The overall objective of this project is to increase access to clean, reliable and affordable energy for the peri-urban high density low income population of Lusaka city. The specific purpose of this project is to rehabilitate, strengthen and expand the existing low voltage distribution network to meet the increased service demand. This will lead to the following expected results:

- a) Effective connection of the 400V low voltage distribution network to the rehabilitated LTDRP back-bone grid which will have an estimated installed capacity of 1300MVA.
- b) Connection of at least 63 000 new customers (households, social/public infrastructure and Micro Small Enterprises (MSEs)) to clean, reliable and affordable energy services.
- c) Reduction of system losses in the distribution network from 22% recorded in 2012 to 17% in 2020.
- d) Improved load management with reduced load shedding at peak demand periods in high density areas.
- e) Strengthened access of beneficiary MSEs and women to credit facilities (micro-financing/cash transfers).

¹³ World Bank; Report No. 77027-ZM.

4.2 Main activities

The main activities to be implemented will be directed towards the rehabilitation, strengthening and expansion of the existing 400V low voltage distribution network to improve service to existing customers and to provide at least 63 000 connections of individual and commercial customers.

The low voltage distribution network rehabilitation, reinforcement and extension will comprise the following two components:

- Rehabilitation, expansion and strengthening of the low voltage distribution network, including connection of the existing low voltage network to the new switching stations (link with the WB-EIB funded component)
- At least 63 000 new individual connections of households, social/public infrastructure and eligible MSEs in urban and peri-urban low income high density areas of Lusaka city will be done through working directly with ZESCO Limited (direct grant). The individual connections foreseen under this programme are:

1. Households:

a) Standard Connection and three Compact Fluorescent Lamps (CFLs): This type of connection includes the service drop wire from a supply line to the meter box, a single-phase pre-paid meter, circuit breaker and lightening arrester. The expected fee for an individual connection is ca EUR 120 (ZMW 1450) with EUR 12.5 (ZMW 150) payable by the new customer as subsidised fee.

b) Enhanced Connection and three CFLs: This type of connection includes the standard connection package and a ready-board where the house owner is unable to afford the costs associated with internal wiring of the dwelling. The cost for an individual connection is EUR 235 (ZMW 2750) with EUR 43 (ZMW 510) being the subsidised fee payable by the new customer. Based on ZESCO experience, it is estimated that no more than 5% of prospective customers will apply for this type of connection.

2. MSEs: Standard 60A single-phase installation (consumption below 15 kVA) with a service cable and a pre-paid meter for shops with floor area not exceeding 16m². The cost for the connection is EUR 200 (ZMW 2400) with EUR 12.5 (ZMW 150) payable by the new customer.

3. Social/public infrastructure: ZESCO Limited will assess the required demand for a 'social tariff structure'. CFL bulbs will be distributed to all connected institutions.

The connections component will include training in financial literacy and business management/entrepreneurship and access to credit facilities (micro-financing/cash transfers) for beneficiary MSEs and women (women empowerment) in the project areas.

4.3 Intervention logic

The planned interventions under this project will seek to address the challenges affecting the low voltage electricity distribution network in Lusaka city as outlined in section 1.1.3:

The proposed action is based on a preliminary design that will be developed into a full detailed design by the design and supervision consultant before works tenders for enabling works can be procured and implemented under this programme. In the process of formulating this programme, the feasibility study done by M/s Aurecon for the LTDRP 'last mile' was reviewed and two additional studies were financed under a framework contract (FWC) for the identification and

formulation phases of the programme. These studies have provided sufficient background information to proceed to the detailed design stage.

Investment package on high and medium voltage grid – WB-EIB-ZESCO Funded

The rehabilitation/extension works envisaged on the low voltage distribution network to be funded under this action complement the bigger investment package, USD 251 million in total, co-financed by the World Bank, EIB and ZESCO with phased rehabilitation, expansion and strengthening interventions for transmission lines at 132, 88, 33 and 11kV including the upgrade of bulk supply points and transformers. The larger high/medium voltage network strengthening is necessary to ensure a stable and reliable transmission of electricity at low voltage distribution and ensure more end users are connected. This investment package can be implemented in parallel to the proposed low voltage distribution network intervention below. The EIB loan agreement with the Government of the Republic of Zambia is conditional on the fact that ZESCO should ensure that the low voltage distribution network is also rehabilitated, including provision of individual connections. Hence, the Government has requested EU assistance for the completion of the 'Last Mile' of the LTDRP together with the access component, referred to as 'Low Voltage Distribution Network: Electricity access - Low income high density areas' below.

Low Voltage Distribution Network: Electricity access- Low income high density areas

The low voltage distribution network rehabilitation, reinforcement and extension co-financed by the EDF grant has two components as listed below:

Component I - Electricity access, Support to MSEs and Women Empowerment

a) New subsidised individual connections

Estimated 63 000 new subsidised individual connections to households, social/public infrastructure and eligible MSEs in urban and peri-urban low income high density areas of Lusaka city to be implemented through a direct grant award to ZESCO Limited.

b) Support to MSEs and Women Empowerment

Grant contract under the management of the EU Delegation supporting beneficiary MSEs and women's access to credit facilities and training in financial literacy and business management/entrepreneurship for existing and start-up businesses. This will cover identification of eligible grant beneficiaries, training and access to credit facilities with specific emphasis on women-led households and vulnerable groups.

c) Technical Assistance 1: Technical Audit

Service contract under the management of the EU Delegation. The TA shall provide technical audit services and assurance to the project stakeholders that the project has been implemented in accordance with the laid down requirements. The services will also cover verification of the actual number of new connections provided as reported by ZESCO including monitoring of the social-economic base-line data.

Component II - Rehabilitation, Extension and Strengthening of the Low Voltage Distribution Network in Lusaka

a) Enabling works

- i) Connection of existing low voltage network to the new switching stations (link with the WB-EIB funded project)
- ii) Rehabilitation, strengthening and expansion of the existing low voltage distribution network

Two or more works contracts to cover the "enabling works" are foreseen to expand the Low-Voltage-Distribution Network (11kV and 400V lines, transformers, etc.) to allow at least 63 000 new subsidised connections. These contracts will be designed and awarded in sequence to accelerate implementation and allow for lessons learned from the first tendering procedure.

b) Technical Assistance 2: Design and Supervision

The preliminary design undertaken by M/s Aurecon and the formulation study both highlighted that "ZESCO Limited data for the existing low voltage (LV) network in the project target areas are only recorded for an estimated 20-30% of the LV lines". Data related to around 80% of the transformers included in the network are not updated. In addition, the dense population in the target areas poses significant access challenges in verifying the network data and condition. Therefore in order to prepare and adequately assess the network in preparing for the works contracts and adequately plan for future connections, a Technical Assistance (TA) contract will be awarded to a service provider to provide both detailed design and supervision expertise as well as to ensure appropriate detailed and optimized planning and supervision of the works contract(s). During the design phase, the TA will also undertake the following to address the existing gaps in ZESCO's data and ensure sufficient design details for tendering of the works component:

- i) Geo-technical and detailed topographical survey including Geographical Information System (GIS) mapping of the existing 11 kV and 400V low voltage distribution lines,
- ii) Survey to establish the real ADMDs (After Diversity Maximum Demand) for the various target areas,
- iii) Socio-economic baseline-study in selected target areas to inform the design and allow for proper monitoring of intended results and evaluation of improvements in people's lives during and after the project.

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 Partnership Agreement between the members of the African, Caribbean and Pacific Group of States of the one part, and the European Community and its Member States of the other part (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 **84 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

Not applicable

5.4 Implementation modalities

5.4.1 Grants: call for proposals – Support to MSEs and Women Empowerment (direct management)

(a) Objectives of the grants, fields of intervention, priorities of the year and expected results

Objectives of the grant will be to support activities which will target eligible Micro Small Enterprises (MSEs) and women who have benefited from the electricity connection fee subsidy with training in financial literacy and business management/entrepreneurship and access to credit facilities or cash transfers to enable them to improve their livelihoods (e.g. starting small scale businesses and/or setting up savings and loan groups). The expected results will be increased income at household level for women.

The proposed action for the call for proposals (CfP) will target beneficiaries (MSEs and women) in line with section 4.1 (e) facilitate beneficiary MSEs and women access to credit facilities and training in financial literacy and business management/entrepreneurship for existing and start-up business within the project target areas.

(b) Eligibility conditions

In order to be eligible for a grant, the lead applicant must:

- be a legal entity person or an entity or a natural person and
- be non-profit-making and be a specific type of organisation such as: non-governmental organisation, micro-finance institution, financial institution, economic operator (SMEs), international (inter-governmental) organisation as defined by Article 43 of the Rules of application of the EU Financial Regulation and
- be established in one of the countries as per eligibility rules of the 11th EDF and
- be directly responsible for the preparation and management of the action with the co-applicant(s) and affiliated entity(ies), not acting as an intermediary.

Potential applicants may not participate in calls for proposals or be awarded grants if they are in any of the situations listed in section 2.3.3 of the Practical Guide.

Subject to information to be published in the call for proposals, the indicative amount of the EU contribution per grant will be between EUR 500 000 and EUR 1 000 000 and the grants may be awarded to sole beneficiaries and to consortia of beneficiaries (coordinator and co-beneficiaries). The indicative duration of the grant (its implementation period) is 48 months.

(c) Essential selection and award criteria

The essential selection criteria are financial and operational capacity of the applicant.

The essential award criteria are relevance of the proposed action to the objectives of the call; design, effectiveness, feasibility, sustainability and cost-effectiveness of the action.

(d) Maximum rate of co-financing

The maximum possible rate of co-financing for grants under this call is 90%.

The justification to co-finance at 90% is to ensure that the level of participation to the call for proposals for local organisations is increased and to encourage lower lending rates to the low-income targeted beneficiaries (MSEs and women). The prevailing economic challenges in Zambia where the cost of borrowing is high are likely to disadvantage locally based organisations, thus it is necessary to increase the rate of co-financing to improve the financing capacity of the targeted grant beneficiaries which is weak in general.

In accordance with Article 192 of Regulation (EU, Euratom) No 966/2012, applicable in accordance with Article 37 of (EU) Regulation 2015/323, if full funding is essential for the action to be carried out, the maximum possible rate of co-financing may be increased up to 100%. The

essentiality of full funding will be justified by the Commission's authorising officer responsible in the award decision, in respect of the principles of equal treatment and sound financial management.

(e) Indicative timing to launch the call
3rd quarter 2018.

5.4.2 Grant: direct award: Subsidised individual connections to households, public institutions and MSEs (direct management)

(a) Objectives of the grant, fields of intervention, priorities of the year and expected results

The objective of the grant is to provide at least 63 000 subsidised individual connections to high density low income households, social/public infrastructure and MSEs within the project target areas of Lusaka city. The larger component of the proposed action will mostly consist of procurement of materials (connection cables, pre-paid meters and associated line materials) and subsidies for connections of at least 63 000 new customers (households, social/public infrastructure and MSEs) to clean, reliable and affordable energy services in the low income high density areas in line with the expected result in 4.1 (b).

(b) Justification of a direct grant

Under the responsibility of the Commission's authorising officer responsible, the grant may be awarded without a call for proposals to ZESCO Limited.

Under the responsibility of the Commission's authorising officer responsible, the recourse to an award of a grant without a call for proposals is justified because the beneficiary is in a '*de facto*' monopoly situation referred to in Article 190 (1c) RAP.

The rationale behind the use of a direct grant as the implementation modality for the 63 000 connections is as follows:

i. ZESCO Limited is the major provider/supplier of electricity services to both the rural and urban population in the country except Copperbelt Energy Corporation (CEC) who supplies the Copperbelt mining firms. ZESCO owns, operates and maintains the entire generation, transmission, distribution and LV network assets in the country, excluding the limited network under CEC for the mines and isolated private generation stations which feed into the national grid. Any individual electricity connections done in the country are done directly by ZESCO personnel and/or ZESCO sub-contracted electrical engineering firms. ZESCO is in a '*de facto*' monopoly as the only organisation (i) operating or (ii) capable of operating in the field of activity and/or geographical area to which the grant relates by virtue of all considerations of fact and law.

ii. This is the most efficient and pragmatic way to implement the proposed action and the model has already been used successfully in similar programmes which the EU co-financed with the World Bank.

(c) Essential selection and award criteria

The essential selection criteria are the financial and operational capacity of the applicant.

The essential award criteria are relevance of the proposed action to the objectives of the call; design, effectiveness, feasibility, sustainability and cost-effectiveness of the action.

(d) Maximum rate of co-financing

The maximum possible rate of co-financing for this grant is 100% (essential for the action to be carried out).

In accordance with Article 192 of Regulation (EU, Euratom) No 966/2012 applicable in accordance with Article 37 of (EU) Regulation 2015/323, if full funding is essential for the action

to be carried out, the maximum possible rate of co-financing may be increased up to 100%. The essentiality of full funding will be justified by the Commission's authorising officer responsible in the award decision, in respect of the principles of equal treatment and sound financial management.

The connection-fee applicable for this action for standard household connection (largest component of the activities planned) is EUR 218 compared to the market prevailing (real) rates ranging from EUR 224 to EUR 236. The reasoning behind this low applicable fee is that ZESCO and the Government's direction on such large scale projects is to facilitate access to electricity (connections) to a large part of the population on the basis of a pro-poor approach where the utility shoulders part of the connection fee chargeable through a 'reduced connection-fee'.

Thus, ZESCO 'indirectly contributes' to the actual connection fee chargeable by offering a reduced connection fee, which justifies the award of a 100% co-financed direct grant.

(e) Indicative trimester to conclude the grant agreement

1st Quarter 2019.

5.4.3 Procurement (direct management)

Subject in generic terms, if possible	Type (works, supplies, services)	Indicative number of contracts	Indicative trimester of launch of the procedure
Technical Audit – Technical Assistance 2	Services	1	Quarter 1 2018

5.4.4 Indirect management with the Government of the Republic of Zambia

A part of this action with the objective of designing and supervising the works contract package(s) and components I and II herein referred to as '*enabling works*' related to the rehabilitation, strengthening and expansion of the existing low voltage distribution network and connection of the existing low voltage network connected to the new switching stations, may be implemented in indirect management with the Government of the Republic of Zambia in accordance with Article 58(1)(c) of the Regulation (EU, Euratom) No 966/2012 applicable in accordance with Article 17 of Regulation (EU) 2015/323 according to the following modalities:

The Government of the Republic of Zambia will act as the contracting authority for the procurement and grant procedures. The Commission will control ex ante all the procurement and grant procedures. The tender for the design and supervision of the works will be launched with a suspensive clause.

Payments are executed by the Commission.

In accordance with Article 190(2)(b) of Regulation (EU, Euratom) No 966/2012 and Article 262(3) of Delegated Regulation (EU) No 1268/2012 applicable in accordance with Article 36 of Regulation (EU) 2015/323 and Article 19c(1) of Annex IV to the ACP-EU Partnership Agreement, the Government of the Republic of Zambia shall apply procurement rules of Chapter 3 of Title IV of Part Two of Regulation (EU, Euratom) No 966/2012. These rules, as well as rules on grant procedures in accordance with Article 193 of Regulation (EU, Euratom) No 966/2012 applicable in accordance with Article 17 of Regulation (EU) 2015/323, will be laid down in the financing agreement concluded with the Government of the Republic of Zambia.

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

	EU Contribution (in EUR)	Indicative third party contribution (in EUR)
Component I: Electricity access, support to MSEs and Women Empowerment	10 000 000	200 000
5.4.1 – Call for proposals (direct management): Support to MSEs and Women Empowerment	2 000 000	200 000
5.4.2 – Grant: direct award (direct management): Subsidized individual connections to households, public institutions and MSEs Direct grant to ZESCO Limited	7 000 000	
5.4.3 - Procurement (direct management): Technical Assistance 1 - Technical audit services	1 000 000	
Component II: Rehabilitation, extension and strengthening of low voltage distribution network in Lusaka	49 700 000	15 000 000

5.4.4 Indirect management with the Government of the Republic of Zambia		
(a) Enabling Works - works contract(s) implementation	44 700 000	
<i>i) Connection of existing low voltage network to the new switching stations</i>	7 200 000	
<i>ii) Rehabilitation, strengthening and expansion of the existing low voltage distribution network</i>	37 500 000	2 420 000
(b) Technical assistance 2: Design and supervision	5 000 000	12 580 000
5.9 – Evaluation, 5.10 – Audit	500 000	
5.11 – Communication and visibility	300 000	
Contingencies	4 500 000	
Totals	65 000 000	15 200 000

5.7 Organisational set-up and responsibilities

Contracting Authority:

The Contracting Authority will be the National Authorising Office (NAO) of the European Development Fund (EDF) on behalf of Government of the Republic of Zambia and the day-to-day management and implementation of the project will be done by ZESCO Limited as the Supervisor.

The Government of the Republic of Zambia continually commits itself to the implementation of cost reflective electricity tariff system for all electricity consumers through dialogue with representative interest groups, ZESCO Limited and the Energy Regulation Board (ERB). This process of migrating to cost reflective tariffs will be done gradually so that consumers are not subjected to high tariff adjustments at once and will be reflected in the Government's commitments under the Energy Declaration of Intent which is about to be signed with Cooperating Partners .

Project Steering Committee (PSC):

The PSC will consist of key stakeholders including Ministry of Energy & Water Development (MEWD), National Authorising Office (NAO), European Union Delegation, ZESCO, ERB, Lusaka City Council (LCC), the Zambia Gender and Energy Network and representatives of the local beneficiary communities. The PSC will be responsible for providing the overall guidance regarding the implementation of the project on a biannual basis, including the selection criteria to be applied for subsidised connections. Regular reporting on project progress will be ensured to the top management of the MEWD (by the Department of Energy (DoE)) as well as to Cooperation Partners supporting the energy sector (by the EU). In addition, the Technical Assistance (Design & Supervision) team leader will meet on quarterly basis with NAO, DoE, ZESCO and EU to discuss the progress and coordination of the project.

Project Implementation Unit (PIU):

The PIU will be established and managed by ZESCO using its own employees specifically dedicated and seconded to the project by ZESCO management. Its main responsibility will be the overall management of the project, including the connections part. The PIU will be headed by a qualified Project Manager and supported by technical, financial and administrative staff. Other experts that will be supporting the PIU on ad-hoc basis triggered by the Project Manager shall be the Planning Engineers, Design Engineers and Social experts. ZESCO Limited has already submitted an organisation structure for the proposed PIU which will be fully staffed before commencement of programme implementation.

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 (for project modality). 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.

A socio-economic baseline-study in selected target areas to formulate the baseline data and allow for proper monitoring of intended results and evaluation of improvements in people's lives will be carried out by the design consultant during the project design stage. During the implementation phase, the technical audit consultant team will progressively monitor and report the project results during their missions.

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 nature of the action, a mid-term and ex-post evaluation will be carried out for this action or its components via independent consultants contracted by the Commission.

A mid-term evaluation is foreseen to be carried out for problem solving, learning purposes, in particular with respect to the progress in ensuring household connections and follow-up on recommendation put forward in the Environmental Safety Management Plan (ESMP).

The ex-post evaluation is foreseen to be carried out for accountability and learning purposes at various levels (including for policy revision), with a focus on exploring the extent to which increased access to electricity services have improved the livelihood of the beneficiaries and have the potential to increase their economic activity (support women empowerment).

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 framework contracts in Q3 2020 (mid-term review) and Q4 2022 (end-term review)

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 three contracts for audit services shall be conducted in the course of implementation of the project. It is foreseen to have annual audits for the ZESCO grant (paid from the budget of the action). If it seems to be prudent to have the financial management and internal control system of ZESCO being assessed, a system audit might be considered.

Indicatively, one contract for audit services shall be concluded under a framework contract in Q1 2019 to undertake annual financial audits.

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.

The communication and visibility measures will be implemented through a service contract under a framework contract arrangement for the planned amount of EUR 300,000 to be launched in Q4 2018.

APPENDIX - INDICATIVE LOGFRAME MATRIX (FOR PROJECT MODALITY)¹⁴

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 and 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	Increase access to clean, reliable and affordable energy for the peri-urban high density low income population of Lusaka city	% of the population with access to electricity** (EURF 111 L1)	65% in 2010	77% in 2020	MEWD, & ZESCO Reports	
Specific objective(s): Outcome(s)	SO1: Rehabilitate, strengthen and expand the existing low voltage distribution network	1.1 Length and capacity of existing network rehabilitated/ length and capacity of extended network **(EURF 113 L2) 1.2 Number and capacity of transformers rehabilitated or replaced	1.1 Length of LV lines - 0 / 0 1.2 tbc during project inception	1.1 Length of LV lines – tbc at project inception 1.2 tbc at project inception	1.1 Completion Acceptance certificate, ZESCO reports 1.2 Survey of transformers to be conducted by the Consultant at the beginning and end of the project	Existing network under the larger LTDRP is rehabilitated and reinforced.
Outputs	S01: Effective connection of the low voltage network to the rehabilitated LTDRP back-bone network	a. Number of switching stations with reinforced connection to the LV network	a. Tbc during project inception	a. Tbc during project inception	a. Completion Acceptance certificate, ZESCO reports	Existing network under the larger LTDRP project is rehabilitated, extended and reinforced

¹⁴ Indicators aligned with the relevant programming document are marked with '*' and indicators aligned to the EU Results Framework with '**'.

	SO1: Consumers in project areas are connected to the grid	a. Number of households connected to the grid in Lusaka area	a. 297,340 (April 2016)	a. at least 63,000 new connections at the end of the project in Lusaka by 2022. (data disaggregated by sex, age and social status)	a. MEWD, ERB & ZESCO Reports	Availability of connection-fee subsidy in project areas
	SO1: Reduced system losses in the distribution network	a. Energy losses as reported by ZESCO	a. 22% in 2012	a. 17% in 2020	a. ZESCO Reports	Improved efficiency in the distribution network will result into energy loss reduction
	SO1: Improved load management	a. System average interruption frequency per year (SAIFI)* ¹	a. 12 No. in 2012	a. 6 No. in 2020	a. ZESCO Reports	System interruption frequency reduced
	SO1: Increase in energy efficiency	a. Yearly maintenance cost per customer b. Minimum hours spent on repair of faults	a. tbc during project inception b. tbc during project inception	a. tbc during project inception b. tbc during project inception	a. ZESCO Reports b. ZESCO Reports	
	SO1: Improved socio-economic empowerment of women and beneficiary MSEs	a. Time spent on household activities by women b. Number of persons trained in financial literacy and business management/ entrepreneurship and accessing credit facilities c. Income for women in business	a. tbc during project inception b. tbc during project inception c. tbc during project inception	a. tbc during project inception b. tbc during project inception c. tbc during project inception	a. Social-economic monitoring survey in target areas at the beginning and end of the project b. Database of training participants to be maintained by the PIU c. Survey of women working in a MSE at the beginning and end of the project	