

**ENVIRONMENTAL AND SOCIAL REVIEW SUMMARY (ESRS)  
PROJECT Scaling Solar Zambia – Neoen # 37811**

***Disclaimer***

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**Project Description:**

As part of the World Bank Group (WBG) Scaling Solar program, Neoen SAS in consortium with First Solar (“the Sponsors”) has been awarded the contract to finance, construct and operate a 55 MWp solar photovoltaic (PV) power plant (“the project”) at the Lusaka South Multi-Facility Economic Zone (LS-MFEZ) in Zambia. The Sponsors incorporated together with IDC (the Industrial Development Corporation, an investment company owned by the Government of the Republic of Zambia) a special purpose vehicle dedicated to the project (“the Company”, or “Bangweulu Power Company Limited”). Neoen, the main sponsor of the project, is an independent power producer, generating electricity from renewable sources (solar, wind or biomass). Neoen develops, finances, builds and operates power plants and is active in France, Portugal, Australia, Mexico, Egypt, Mozambique, Jamaica, Zambia, Jordan and El Salvador. With a current operating base of 759 MW, Neoen seeks to achieve installed power of over 1,000MW by 2017. The Zambia PV power plant to be built under the WBG’s Scaling Solar program will operate on a 25 year Power Purchase Agreement (PPA) signed with ZESCO, the integrated electricity utility company of Zambia. The total project cost is estimated at US\$60 million. The World Bank (WB) is providing a payment guarantee and IFC’s proposed investment consists of an A loan of up to \$15 million.

The power plant covering a maximum footprint area of about 52 hectares will require about 460,000 thin film modules from First Solar and 12 transformers. The proposed PV system will be connected to the grid and the electrical energy will be evacuated through the Lusaka South MFEZ substation, via a 33kV underground cable. The underground cable will be financed, implemented and commissioned by the company, and then handed over to ZESCO.

The project site is situated within the LS MFEZ about 15 km to the South and East of the Lusaka Central Business District. The site is bordered by the Lusaka National Park to the South and some agricultural holdings to the East.

The company has assigned Sterling & Wilson as the engineering, procurement and construction (EPC) contractor as well as the operations and maintenance (O&M) contractor. The construction phase is expected to take eight months; commissioning is expected to be in November 2017 with plant take-over expected in December 2017. In order to be flexible on the planning and to accommodate changes in the project schedules, the notice to proceed with the works (NTP) date is used as a timing reference.

**Overview of WB and IFC’s Scope of Review:**

WB and IFC's review included the following activities: (i) site visits in April, August and September 2016; (ii) review of available project documents and environmental assessment reports and Neoen's Health, Safety Environmental Management Plan (HSEMP); (iii) review of Mphande socio-economic survey reports; (iv) meetings with key officers of Neoen, the Zambian Industrial Development Corporation (IDC) and the Zambia Disaster Management and Mitigation Unit (DMMU) as well as members of the affected communities and the local administrative authorities – Acting District Commissioner and Permanent Secretary of the Kafue District.

**Identified Applicable Performance Standards:**

*While all Performance Standards are applicable to this investment, WB and IFC's environmental and social due diligence indicates that the investment will have impacts, which must be managed in a manner consistent with the following Performance Standards:*

PS 1 – Assessment and Management of Environmental and Social Risks and Impacts

PS 2 - Labor and working conditions

PS 3 - Resource Efficiency and Pollution Prevention

PS 4 – Community Health, Safety and Security

PS 5 – Land Acquisition & Involuntary Resettlement

PS6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources is not considered applicable for this project as the area has been modified through agricultural use and other human activities and the biodiversity assessment undertaken reports that no flora or fauna of conservation value were identified in the project area. PS7 - Indigenous Peoples and PS8 - Cultural Heritage have also not been identified as being applicable to this project as there are no known groups of indigenous persons in the project area and no items of cultural heritage were suspected or identified in the project area.

*If WB guarantee and/or IFC's investment proceeds, WB and/or IFC will periodically review the project's ongoing compliance with the Performance Standards.*

**Environmental and Social Categorization and Rationale:**

This is a Category B project according to IFC's Policy on Environmental and Social Sustainability. The proposed investment is expected to have limited environmental and social impacts, which are site-specific, temporary and none is expected to be significant. Those impacts can be avoided or mitigated by adhering to applicable performance standards, procedures, guidelines and design criteria as described in the following sections. This categorization is consistent with categorization of other similar projects within this sub-sector.

The main environmental, social, occupational health and safety risks identified for this project relate to the management of solid and liquid wastes; dust during construction, the capacity of the EPC/O&M contractor Sterling & Wilson to manage their social, environmental and safety performance and engage with project stakeholders; assurance of fair, safe and healthy working conditions for all workers during construction and operations; and management of community health and safety.

### **Environmental and Social Mitigation Measures**

WB and IFC's appraisal considered the environmental and social management planning process and documentation for the project and gaps, if any, between these and WBG requirements. Where necessary, corrective measures, intended to close these gaps within a reasonable period of time, are summarized in the paragraphs that follow and (if applicable) in an agreed Environmental and Social Action Plan (ESAP). Through the implementation of these measures, the project is expected to be designed and operated in accordance with the Performance Standards objectives.

#### ***PS 1 - Assessment and Management of Environmental and Social Risks and Impacts***

WB and IFC's assessment considered documentation of Neoen's management of its environmental, safety and health performance; compliance with Zambian permitting requirements; and stakeholder engagement and disclosure of information about the project and its operations.

Environmental and Social Assessment and Management System: As this is a greenfield project, The Company currently has no specific ESMS in place for the construction or operation of the project. For its international operations, the company has a generic ESMS, which the EPC contractor for each specific project will review, update, and adopt for the project. Aspects related to the identification and management of environmental and social impacts are described in the paragraphs below. In order to manage the environmental and social risks and impacts associated with the construction and operation of the project, as indicated in ESAP action item 1, Sterling & Wilson, as the EPC and O&M contractor, will develop and implement an ESMS suitable to the scale of the project and which meets the requirements of applicable Zambian laws and WB and IFC Performance Standards. The ESMS will include policies, plans, manuals and procedures aligned with ISO 14001. The ESMS will incorporate the Environmental Management Plan (EMP) developed for the project as well as the aspects related to construction covered in the WBG General Environmental Health and Safety (EHS) Guidelines.

Policy: Neoen has corporate Health, Safety and Environment Policy, which describe the company's commitment to the protection of the environment and people and the safety of its employees. The policy requires compliance with applicable laws and relevant health, safety, and environmental standards. The corporate policy applies to all aspects of its operations – construction, operation and maintenance; and is communicated to employees and other stakeholders.

Identification of Risks and Impacts: In line with the Zambian environmental regulations, an Environmental and Social Impact Assessment (ESIA) was conducted for the project as required by the Zambian Environmental Management Agency (ZEMA). An EMP was prepared alongside the ESIA and submitted to ZEMA for an environmental authorization. The ESIA was conducted by Knight Piesold Consulting and ZEMA is currently reviewing the ESIA reports. It is noted that although the environmental authorization has not been issued yet, the ESIA covered the relevant local environmental and social regulations and the key aspects of the WBG Performance Standards relevant to the project. The ESIA covered the project design, construction, operations and decommissioning. The ESIA addressed project alternatives; identification and assessment of environmental and social risks and impacts; and measures to avoid, mitigate or offset the impacts

identified. The potential impacts identified and assessed include air quality; biodiversity; hydrology and water quality; occupational health and safety (OHS); waste; noise; traffic and visual impacts; and geology and topography. The ESIA also included a socio-economic baseline and impact assessment of the communities around the project site. The project EMP identified measures to minimize the impacts associated with the project.

**Management Programs:** Project-specific management programs are developed as applicable for all Sterling & Wilson projects. The health, safety, environmental and social requirements for the construction phase have been identified in the company's EPC contract. As indicated above, for the Scaling Solar project, Sterling & Wilson will develop and implement a management system and will integrate the project EMP into the system. The ESMS and the associated documents will cover the construction phase and will be updated to cover the operations phase.

**Organizational Capacity and Competency:** Sterling & Wilson will appoint a Health, Safety and Environmental (HSE) Officer to oversee the implementation of the ESMS and the associated procedures for the construction phase of the project and will ensure monitoring during operation. This is covered under ESAP action item 2. In addition, Sterling & Wilson will ensure that its subcontractors appoint HSE personnel for the construction phase. Bangweulu will also appoint a Community Liaison Officer (CLO) who will be responsible for overseeing the interaction with the affected communities and other stakeholders, through the CDP.

**Emergency Preparedness and Response:** The company will ensure that Sterling & Wilson develops and implements an Emergency Preparedness and Response Plan. The plan will identify emergency scenarios for both construction and operations phase, including – fires, explosions, medical emergencies, accidents, spills, property damage and extreme weather conditions. All emergency procedures and communication protocols will be documented in the plan.

**Monitoring and Review:** During construction and operations, all parameters that require monitoring in line with local regulations will be monitored, as defined in the project EMP. Periodic safety, health and environment audits/inspections will be conducted by the company ; and monitoring data and reports will be provided to the local authorities as required.

As covered in ESAP action item 1 for this project, for the operations phase, the company will define key performance indicators (KPIs) in order to monitor HSE parameters such as lost-time incidence frequency rate, accident free days, water consumption, wastewater parameters and air emissions. In addition, the HSE Officer will define an integrated HSE report to cover key HSE KPIs and present it to senior management for review. The HSE KPIs will include: compliance with legal and regulatory requirements; HSE management system progress report; water consumption; solid and liquid waste management; safety statistics, including leading and lagging indicators; community complaints and community engagement activities.

### ***PS 2 – Labor and Working Conditions***

During the construction phase, it is expected that the total workforce on the project will be up to approximately 200. It is also expected that a substantial number of workers will be recruited from the local community within 10 to 25 km of the project site. There will be no workers' accommodation erected for the project; workers from the nearby communities will be transported to and from the project site. When fully operational, the company is expected to have seven full time professional technical employees for operations and maintenance as well as thirty seven unskilled personnel third-party security and workers for cleaning and grounds-keeping.

**Human Resources Policies and Procedures:** During the construction phase, workers will be subject to a Project Labor Agreement (PLA) to be instituted by Sterling & Wilson. The PLA will incorporate information such as working hours, standard contracts, minimum wage requirements and security requirements, and will also be applicable to all sub-contractors. As indicated in the ESAP action item 4, Sterling & Wilson will ensure that the PLA as well as the HR Procedures for the operations phase meet the requirements of this Performance Standard as well as applicable Zambian labor laws.

**Workers' Organization:** Due to the stage of the project, there is no indication as to the number of unionized employees expected to be involved in the construction phase. It is noted however that the PLA will be between Sterling & Wilson, the sub-contractors and the relevant unions as may be applicable to the project. During operations, Sterling & Wilson will allow freedom of association in line with the requirements of this Performance Standard.

**Non-discrimination and Equal Opportunity:** the company and Sterling & Wilson are committed to the principles of employment equity, equal opportunities and empowerment, regardless of gender, race, color or creed. As part of the PLA and HR Policies and Procedures for the operations, Sterling & Wilson will develop and implement a formal policy on non-discrimination and equal opportunity to cover all aspects of the Scaling Solar project.

**Grievance Mechanism:** As indicated in the labor requirements for the EPC contract, a worker grievance mechanism will be in place during the construction phase. For the operations phase, Sterling & Wilson will ensure the HR procedures incorporate an adequate grievance mechanism procedure.

**Occupational Health and Safety:** As this is a Greenfield project, Sterling & Wilson as the EPC and O&M contractor, will develop appropriate OHS procedures for the construction and operations phase which are consistent with the requirements of this Performance Standard and local Zambian Laws including the Occupational Health and Safety Act and Construction Regulations. This has been included as action item 5 of the ESAP for this project. KPIs for this project will include OHS indicators which will be documented as part of the project improvement process. Sterling & Wilson will provide appropriate protective equipment for all its staff and project workers and provide the required training to ensure that staff and project workers work in a safe manner. Sterling & Wilson will also ensure that sub-contractors provide appropriate protective equipment and training and also comply with all the requirements of local Zambian Laws and this Performance Standard.

**Workers Engaged by Third Parties:** It is expected that during the construction and operational phases Sterling & Wilson will make use of service providers for security and maintenance roles. As set forth in the ESAP action item 6, Sterling & Wilson will develop and implement a procedure to ensure contractors' labor and working conditions comply with the requirements of this Performance Standard and Zambian Laws, including consideration for grievance mechanisms for third party workers and fair working conditions.

### ***PS 3 – Resource Efficiency and Pollution Prevention***

Potential pollution issues during the project's construction phase will be those typically associated with construction sites such as dust, noise, oil spills and traffic. All these impacts are

limited and temporary and will be mitigated with standard mitigations measures which are included in the EMP. During operations, the main issues relate to water use and management, waste management, and visual impacts. Potential nuisance impacts during the construction and operations phases to the broader community are expected to be limited. It is noted that pollution impacts associated with solar PVs are not as significant as other solar power generation projects; these impacts are briefly described in the paragraphs below and can be largely mitigated through effective implementation of the EMP associated with this project. Where required, additional measures have been included in the ESAP for this project as indicated below.

**Energy and Material Efficiency:** The highest amount of resources and materials will be consumed during the construction phase. Energy for the construction project will be supplied by diesel/petrol generators. During operations, the energy supply will be drawn from the energy generated by the project.

**Water:** During the construction phase, water will be required for road construction, dust suppression, drinking water and domestic purposes. It is estimated that approximately 20,000 liters of water will be required per day during the construction phase. Given that the project involves PV rather than CSP technology, water consumption will be limited during operations; water will only be required for cleaning and domestic purposes. It is estimated that 15,000 liters of water will be required per week. Water for the project will be sourced locally from the LZ-MFEZ who will obtain the water abstraction authorization from the municipality.

**Greenhouse Gas (GHG) Emissions:** As this is a solar project, the GHG emissions associated with the operations phase of the project are minimal. The GHG emissions associated with the combustion of fossil fuels for power generation and transportation during construction will be limited and temporary. Therefore, the project will not be required to quantify and report the CO<sub>2</sub>-equivalent emissions as required under this Performance Standard.

**Pollution Prevention:** During the construction phase, air emissions from the project will primarily be dust/particulates from land clearing and earth works as well as particulate matter, nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO) and sulfur dioxide (SO<sub>2</sub>) from the combustion of fuels. The air quality assessment in the ESIA indicates that there will be temporary negligible impacts on sensitive receptors (residential areas). Measures to minimize these impacts have been identified in the project EMP.

Noise pollution is expected from the project during construction and operations. The baseline noise assessment conducted during the ESIA indicated that there were no major noise-emitting sources and no sensitive receptors within 500m of the project site. Noise attenuation analysis in the ESIA revealed that beyond 500m, noise from the project site during construction will on the average be 50dB or less. Measures to minimize noise impacts have been identified in the project EMP. Available data on noise generation by PV plants during operations indicates noise at source could be up to 60dB. With attenuation, noise impacts are expected to be minimal.

**Solid Waste Management:** Construction waste such as domestic waste, inert waste (rubble, spoil) recyclables (plastics, paper, metals.) and small quantities oil-contaminated rags will be sorted on site and collected by a licensed waste collector for recycling and disposal as appropriate. General waste generation during operations is expected to be minimal; the waste will be disposed of by a licensed waste contractor. Wastes from the solar panels during maintenance will be collected and

recycled/disposed of appropriately. As part of the procedures for the ESMS, a Waste Management Plan will be developed and implemented by Sterling & Wilson; this has been included in the ESAP as action item 7 for this project.

**Hazardous Materials Management:** Chemicals to be used during construction and operation of the power plant may include herbicides for weed control and cleaning chemicals used for cleaning the solar panels. These chemicals will be stored in small quantities on site and the measures identified in the EMP will be implemented to minimize any impacts. Other hazardous materials include fuels and lubricating oils. Petrol/diesel for generators will be stored in above-ground storage tanks fitted with containment bunds.

#### ***PS 4 – Community Health, Safety and Security***

**Community Health and Safety:** The project is not expected to lead to significant safety and health impacts on the community. Increased traffic associated with the project, in particular during the construction phase, may pose some safety risks to the community. It is estimated that approximately 600 trips will be required to transport equipment to the site. In addition, daily traffic will include the transport of personnel to and from the site. During the operations phase, the site will be fenced and public access to the solar plant will be prevented. In addition, the LS-MFEZ is an area with controlled security access involving armed Zambia Police Force personnel and unarmed private security personnel. Traffic impacts will be greatly reduced as vehicles will only be required to transport employees to work on a daily basis. If required, infrastructure for routine maintenance and upgrading phases will also be transported to site by road. The implementation of measures identified in the EMP is expected to reduce any potential impacts due to traffic associated with the project.

**Hazardous Materials Management and Safety:** The project will require the use of limited quantities of hazardous materials such as cleaning chemicals, herbicides, fuels and oils. As discussed under Performance Standard 3, the quantities are limited and the materials will be managed in a suitable manner to avoid community exposure to these materials.

**Security Personnel:** Site security will be managed by a private security firm who will provide trained unarmed security personnel. Sterling & Wilson will assess the risks posed by its security arrangements to communities near the project site and ensure that the security contractor operates in a manner which meets the requirements of this Performance Standard. In making such arrangements, The company and its EPC contractor will be guided by the principles of proportionality and good international practice in relation to hiring, rules of conduct, training, equipping and monitoring of such workers, and by applicable Zambian law. The EPC contractor will make reasonable enquiries to ensure that security provider staff are not implicated in past abuses and will train them in appropriate conduct toward workers and affected communities. The project grievance mechanism (described below) will be available to communities should issues arise between them and security personnel.

#### ***PS 5 – Land Acquisition and Involuntary Resettlement***

The 52 hectare project site represents 2.5 % of the overall 2100 hectare Lusaka South Multi Facility Economic Zone (LS MFEZ), which is managed by the Zambia Development Agency (ZDA). This MFEZ industrial zone was established in 2010 with the purpose of promoting economic development in Zambia. Since its inception it has been open to expressions of interest

for project development from both local and international firms. To date 24 companies have received approval to operate within the LS MFEZ site and a number of these have already begun operations there. A Zambian parastatal company, the Industrial Development Corporation (IDC), is involved both in LS MFEZ development and – as a shareholder - in the project company to be financed.

The project site is located in the south east corner of the zone and was identified by GoZ in late 2015 / early 2016 as part of studies into the feasibility of the Scaling Solar concept in Zambia. It was awarded to the company in June 2016 ‘clear and unencumbered’ of human use and habitation. Subsequent World Bank Group (WBG) due diligence found that the establishment of the LS MFEZ involved two phases of government-managed resettlement – the first in 2012/13 and a second, subsequent clearing of further claimants (allegedly opportunistic settlers) in 2015. Although the planning of both phases of Government managed resettlement pre-dates the project concept and is therefore not directly attributable to the project to be financed, a summary of the government processes is provided below in order to frame the social mitigation measures committed to by the client, outlined below and in the ESAP.

The LS MFEZ site was identified in 2007/8 via a Japanese International Cooperation Agency (JICA) led program. The site was part of the GoZ owned Lusaka South Forest Reserve, in which vegetation clearing and cropping were prohibited. Nevertheless, by 2009 an estimated 100 ‘informal farming and squatting’ households were identified across the site, and by 2012 this number had risen to 962 households (around 5100 persons), 247 of whom were living there and the remainder (715 households) using it to varying degrees for farming purposes. As per Zambian law, these households were classified as illegal users and could have been evicted, though some had been living on the site for long periods of time. Following consultations involving JICA, GoZ and various other institutional and community stakeholders, the 247 households living on the site were considered eligible for compensation and resettlement under Zambia’s National Resettlement Policy, whilst the 715 households using the site for farming purposes only were not.

Resettlement was planned and implemented by Zambia’s Disaster Management and Mitigation Unit (DMMU). The 247 eligible households were offered two options for resettlement: i) physical resettlement to alternative land identified by the Government, with assistance or ii) compensation in cash, with no further assistance. Of these, 32 households elected to be physically resettled to various alternative sites in October 2013: 15 households moved to Kanchibiya Resettlement Scheme in Mpika District; 15 households to Milambo Resettlement Scheme in Milenge District and 2 households to Dongwe Resettlement Scheme in Lukula District. Most of these sites are located far away (up to 700 km) from the LS MFEZ area. The resettled households were given new land plots ranging from 5 – 25 ha in size, temporary housing, a relief package of food to last three months, cash compensation and farming inputs to kick-start their agricultural activities; they were also provided with temporary housing whilst establishing new homes, and with agricultural extension services. The remaining 215 eligible households elected cash compensation, which was paid in October 2013. A further 20 households later claimed they had been mistakenly excluded from the process, and were also physically resettled to Kanchibiya Resettlement Scheme and provided with land and the same relief packages and assistance as per those originally resettled. This process appears to have been implemented in line with prevailing GoZ resettlement laws and regulations.



A year later, in 2014, 295 additional persons who had allegedly moved onto the LS MFEZ site following the resettlement described above, appealed to DMMU to be resettled. DMMU rejected their claims, which were regarded as opportunistic. These households needed to be removed from the LS MFEZ site in order for development to proceed, however, and were eventually referred to the Office of the District Commissioner which agreed to include them in a resettlement scheme at a new relocation site 30 km away at Mphande. This second group was eventually moved to the proposed resettlement area in November 2015, following delays in the de-gazetting process. As of November 2016 these households were still in temporary accommodation and waiting for land to be allocated for housing and farming purposes. There is a lack of social services at this site, including no water supply, sanitation or education facilities. Discussions with the relevant authorities indicate that land has now been allocated for a planned housing scheme and that plots are in the process of being surveyed and distributed to the affected persons. Security, education and other services are also planned for these households, under the 2017 budget allocated by GoZ. As discussed further below, this second phase of resettlement was not associated with the Company's site.

In general, legacy Government managed resettlement from large industrial parks is challenging, if not impossible, for individual private sector clients to individually mitigate. In these scenarios, government agencies acquire a much larger area of land than the plot which is allocated to the client, making it difficult (especially in the absence of a social baseline or resettlement planning study) to verify and/or to complement deficiencies in past government managed mitigation efforts. In this case, Neoen was identified as winning bidder for this project after resettlement took place and was not in a position to influence or supplement the resettlement planning or implementation phases as envisaged under the Government managed resettlement sections of PS 5. As such, it is not considered feasible for the company, which occupies just 2.5% of the MFEZ, to mitigate government managed resettlement impacts associated with the entire 2100 ha Lusaka South MFEZ in which 24 local and international companies have been approved, and some have started to operate.

Instead, historic satellite imagery as sourced and analyzed by the WBG has been assessed in order to better understand legacy social impacts directly associated with the Company project site. Detailed analysis of time-sequenced imagery shows that about 5 households (10 structures) were living and farming on the site in 2012 when the DMMU-managed census was undertaken, and that, just prior to actual relocation a year later, this number had increased to approximately 35 households (70 structures). It also clearly shows that the site was completely cleared in 2013 and not subsequently re-inhabited, i.e. no households from the site were involved in the second (2014-2015 Mphande Forest) phase of MFEZ-wide resettlement. Therefore it has been agreed that any mitigation measures will, where possible, focus on those households economically and/or physically displaced from the Company project site in 2012/13 and located in the vicinity of the Neoen project site boundaries. Those households involved in the Mphande Forest (second phase) resettlement from the broader MFEZ area are not included.

PS 5 requirements in relation to planning and implementation of Government managed resettlement are not considered to be feasible in this type of industrial zone legacy situation and, in the absence of specific social information associated with the project site, individually targeted mitigation measures are impractical and unlikely to succeed. However, in recognition that legacy Government managed resettlement may have led to residual social risks in the project's area of influence, the company is committed to addressing such impacts on a best efforts basis by offering community-level benefits such as improved social services, access to credit and/or

livelihood improvement measures (as per attached ESAP). This will be achieved via development and implementation of a targeted Community Development Plan, the funding of which (0.5% of annual project revenue) has been contractually allocated on an annual basis in the client's contract.

The CDP aims to mitigate the potential risk of loss of 'social license to operate' resulting from past government managed resettlement from the project site. As noted above, the CDP will target those households displaced from the project site in 2012/13, and the communities in which they currently reside, near the project site. This is likely to encompass those who were physically displaced and opted for cash compensation (and who remained in the project area), and those who were economically displaced but not considered eligible for compensation in the first phase of Government resettlement from the LS-MFEZ. It will exclude the few households who opted for relocation to distant (300 – 700 km away) resettlement sites, as a) community-level benefits cannot be practically extended to these households; and b) they cannot impact the project's social license to operate in the way that those living in the project area can. The CDP will be independently monitored to ensure effectiveness in terms of mitigating potential social impacts and bringing further development impacts to the affected communities.

#### **Stakeholder Engagement:**

The communities considered affected by the project and who were included in the stakeholder engagement and consultation activities processes, include those located relatively near to the project site, adjacent to the MFEZ; and those who were resettled as part of the Government –led resettlement scheme associated with the MFEZ as a whole (as described above).

Those located adjacent to the MFEZ include residents of Shantumbu Villages (about 450 households, about 5-7 km to the South and Southwest of the project site); and Mahopo Village (370 households, around 9km from the project site). Shantumbu Village is relatively unsophisticated and characterized mainly by subsistence farming and a lack of social amenities. Villages from this area used to use the MFEZ area for farming, grazing and access to natural resources. Mahopo Village is more formalized, with most people involved in formal employment and with more improved social amenities. There are not likely to be direct impacts on this village besides a source of potential labour for the project. Leopards Hills, Chalala and New Kasama residential areas are relatively sophisticated suburban and commercial farming areas which are located on and around Leopards Hill Road, one of the main roads leading to the project site. They would therefore likely be most impacted by construction traffic associated with the project. The nearest residential houses are located about 2 km North of the project site while the nearest agricultural holdings in New Kasama are located within a kilometer of the site, on the eastern side of the site. The communities affected by the MFEZ Government-led resettlement include Kanchibiya in Mpika District (around 700km from the MFEZ); Milambo in Milenge District (over 700km from the MFEZ) and Dongwe in Kaoma District (450km from the project site). These were the households affected by the original DMMU resettlement. The Mphande Forest Resettlement Area (over 30km from the project site) includes those households included in the second resettlement scheme.

Initial stakeholder consultations were conducted in October 2015 by WSP - Parsons Brinkerhoff consultants as part of the pre-ESIA consultations. The institutional stakeholders consulted were drawn from key project implementing agencies, which included Lusaka South Multi-Facility

Economic Zone Management, ZESCO Management, ZEMA Management and IDC Management.

As part of the project ESIA process, public consultations were undertaken at ESIA Scoping meetings held on 11th and 12th March 2016 at Nakatindi Hall (Lusaka Civic Centre) and Cooperative College Conference Hall respectively. The stakeholders were invited to attend scoping meetings by way of written invitation letters and by placing public notices for the meetings in publicly and privately owned print media. These included the Zambia Daily Mail (public) and the Post Newspaper (private). The objective of the meeting was to inform all interested and affected parties of the project, and provide them with answers to any questions they had. Over 200 people attended the meetings from the affected communities. The main issues raised in the meeting were related to community benefits of the project. Another round of public meetings was similarly undertaken the 8<sup>th</sup> and 9<sup>th</sup> July with in addition the presence of the Project Company.

Further, more focused consultation meetings, in which IFC participated, were held on 25 and 26 August at the Shantumbu and Mphande communities respectively. The meeting was attended by IDC, Knight Piesold and representatives of the affected communities from the Mphande resettlement. The main issues raised in this meeting were around the project's social responsibilities in the area, compensation for loss of assets and access to land, allocation of replacement land, and some technical questions around the operation of the solar panels. As noted above, compensation and identification of replacement land at Mphande are now known to be unrelated to this project and are being dealt with by the relevant Zambian agencies.

Ongoing informal consultation with authorities and village representatives has been undertaken by the Knight Piesold social specialist. As indicated in ESAP action item 3, the project will develop a stakeholder engagement plan (SEP) including a program for consultation with those affected, particularly those directly affected by the DMMU-led historic government-managed land acquisition process, and those who are most directly affected by the project. The SEP will be designed and implemented prior to construction, during construction and to a lesser degree, during operations. As indicated under Performance Standard 1, a project CLO will be recruited to be present in the local area and receive grievances as part of a broader project grievance mechanism that will allow for grievances to be addressed in a timely and effective manner.

**Broad Community Support:**

BCS – Not Applicable

BCS – Assessed

BCS – In Progress

**Environmental and Social Action Plan:**

	Action Item	Deliverable	Deadline
<b>Performance Standard 1: Environmental and Social Assessment and Management System</b>			
1	The company will design and implement an Environmental and Social Management System for the construction and operations phase consistent with WBG IFC Performance Standard requirements. The System will define roles and responsibilities, and other necessary elements (manual of procedures) to enable all operations to comply with Zambian laws and regulations and WBG IFC Performance Standards. Amongst other elements, the management system will include a policy, an updated ESMP, an emergency preparedness and response plan, an emission monitoring program, HSE KPIs as well as an external grievance mechanism.	Provide the ESMS for WB/IFC/ <b>OPIC</b> review	Financial Close Date (Estimated March 2017)
2	Organizational Capacity: The company will provide additional detail on the capacity within its organization to implement and enforce the Environmental and Social requirements and shall appoint qualified individuals to implement the management system, including the appointment of a Health Safety Environment Officer and a Community Liaison Officer.	Submit adequate evidence of appointments and qualification to WB/IFC/ OPIC	Financial Close Date (Estimated March 2017)
3	Stakeholder Engagement Plan: The company will develop and implement a Stakeholder Engagement Plan for the project, including an accessible and effective community grievance mechanism.	a) Provide WB/IFC/OPIC with the draft of the Stakeholder Engagement Plan b) Provide evidence of dissemination of the procedure in relevant public communication at each facility.	Financial Close Date (Estimated March 2017)
<b>Performance Standard 2: Labour and Working Conditions</b>			
4	Human Resources Policies and Procedures: The company will provide for World Bank/IFC/OPIC review an occupational Health and Safety Plan (OHS). The Plan will develop and implement a Project Labor Agreement for the construction phase and Human Resource Policies and Procedures for the operations phase which meet Zambian	a) Provide the project labour Agreement for WB/IFC/OPIC review and approval. b) Provide adequate evidence of HR	a) Financial Close Date (Estimated March 2017) b) Financial Close Date

	regulations and the requirements of Performance Standard 2. The documents will include a worker grievance mechanism and non-discrimination policies.	policy and procedures incorporation into management systems, the disclosure process to employees and full implementation.	(Estimated March 2017)
5	Occupational Health and Safety: The company will develop and implement Occupational Health and Safety (OHS) policies and procedures. The policies and procedures will include identification of managers/persons responsible for OHS performance, on-going training, and a mechanism for reviewing deviations from procedures and improving performance both during construction and operational phase. The procedures will also include the management of contractor OHS matters	Present to WB/IFC the OHS management system procedure, including action plan and implementation schedule	a) Financial Close Date (Estimated March 2017)
6	Third Party Workers: The company will develop and implement a contractor management procedure to ensure that key PS 2 provisions such as written working conditions, OHS protections and a grievance mechanism are passed through to contractors and that the company provides active oversight of the implementation of these provisions.	Provide a Contractor Management Procedure including oversight responsibilities	
<b>Performance Standard 3: Pollution Prevention and Abatement</b>			
7	Waste Management Procedure: The company will develop a Waste Management Procedure for the construction and operations phase which meets the requirements of Performance Standard 3 and which includes details of intermediate waste management procedures until such time as the MFEZ centralized waste management facilities are in operation.	Submit waste Management procedure for WB/IFC/OPIC review	Financial Close Date (Estimated March 2017)
	The company will recycle all panels at the end of their useful life unless otherwise approved.	Plan if an alternative to recycling is to be proposed	Financial Close Date + 3 months (Estimated June 2017)
<b>Performance Standard 5: Land Acquisition and Involuntary Resettlement</b>			
8	The company will address residual social risks related to the 2013 resettlement from the project site on a best efforts basis, by	Submit CDP to WB/IFC/OPIC for review	Financial Close Date + 4 months (Estimated July)

	offering community level benefits such as improved social services, access to credit and/or livelihood improvement measures. This will be achieved via design and implementation of a Community Development Plan that targets households displaced from the project site in 2012/13 by the DMMU-led process that still reside in the project area, and the communities in which they currently reside. Independent monitoring of the CDP will be commissioned by the company.		2017)
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**Local Access of Project Documentation:**

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Please note project documentation will be available on site once the base camp is operational. Until then, please find below the administrative address in Zambia:

Company Name: Bangweulu Power Company Limited

Address: Building 3, Acacia Park, Stand No. 22768, Thabo Mbeki Road, P.O.Box 39371 – Lusaka - Zambia