



Combined Project Information Documents / Integrated Safeguards Datasheet (PID/ISDS)

Appraisal Stage | Date Prepared/Updated: 01-May-2018 | Report No: PIDISDSA24275



BASIC INFORMATION

A. Basic Project Data

Country Western Africa	Project ID P162580	Project Name Solar Development in Sub-Saharan Africa - Phase 1 (Sahel)	Parent Project ID (if any)
Region AFRICA	Estimated Appraisal Date 25-Apr-2018	Estimated Board Date 21-Jun-2018	Practice Area (Lead) Energy & Extractives
Financing Instrument Investment Project Financing	Borrower(s) West African Power Pool (WAPP)	Implementing Agency West African Power Pool (WAPP)	

Proposed Development Objective(s)

The Series of Projects' development objective (PDO) is to support the deployment of Regional Solar Parks in West Africa by leveraging private capital and enabling solar electricity dispatch and trade.

SOP #1 furthers this objective with project specific PDO to (i) strengthen the regional technical capacity to integrate solar electricity into the grids and (ii) support the preparation of large-scale solar parks.

Components

Regional Solar Integration, Dispatch and Capacity Building.
Regional Solar Parks Preparation.

PROJECT FINANCING DATA (US\$, Millions)

SUMMARY

Total Project Cost	21.00
Total Financing	21.00
of which IBRD/IDA	21.00
Financing Gap	0.00

DETAILS

World Bank Group Financing



International Development Association (IDA)	21.00
IDA Grant	21.00

Environmental Assessment Category

A - Full Assessment

Decision

The review did authorize the team to appraise and negotiate

B. Introduction and Context

Regional Context

1. Regional cooperation is critical to end extreme poverty and boost shared prosperity in the West Africa region and the Sahel¹ (together the Broader West Africa Region or the Region). This Region is diverse economically, culturally, and ecologically presenting both opportunities and challenges for regional cooperation. Countries in the Region have moved politically and economically towards greater cooperation. The first effort of regional cooperation was in 1945 with the creation of a single currency union that brought together the francophone countries that are part of this Region. In 1975, 15 countries – Benin, Burkina Faso, Cape Verde, Cote d’Ivoire, The Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Sierra Leone, Senegal and Togo – came together, via the treaty of Lagos, to promote economic integration across the Region by forming the Economic Community of West African States (ECOWAS). ECOWAS’ mission is to promote economic cooperation and regional integration as a tool for an accelerated development of the West African economy as presented in the ECOWAS Vision 2020². In 2014, Burkina Faso, Mali, Mauritania, Niger and Chad created the G5 Sahel to coordinate policies and strategies for development and security. The Sahel Alliance was launched in 2017 by France, Germany and the European Union, along with the World Bank and the United Nations Development Programme (UNDP). This international cooperation platform for the Sahel region aims to implement over 500 projects between 2018 and 2022 for a total amount of EUR 6 billion focusing on six priority sectors: youth employment, rural development and food security, energy and climate, governance, decentralization and access to basic services, and security.

2. Despite positive prospects, overall growth in the Broader West Africa Region remains low, primarily due to its vulnerabilities to external shocks, economic interdependencies and recent political instability. According to the International Monetary Fund (IMF), if gross domestic product (GDP) increase

¹ The Broader West Africa Region encompasses 15 countries: Benin, Burkina Faso, Cape Verde, Cote d’Ivoire, The Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Sierra Leone, Senegal and Togo.

² The ECOWAS Vision 2020 is a resolution adopted by ECOWAS in June 2007 to significantly raise the standard of living of the people in the Region through conscious and inclusive programs.



has been significant in some countries in 2017 such as in Cote d'Ivoire (7.6 percent), Senegal (6.8 percent) and Burkina Faso (6.4 percent), it has been very low or even negative in other countries of the Region such as Nigeria, Gambia and Liberia. Difficulties in achieving steady sustainable growth in the Region have been primarily driven by dependencies to external global economic trends such as raw material prices, political instability, in particular in the Sahel, aftermath of the Ebola crisis, climate variability and change impacts and, recent economic downturn coupled with high inflation in Nigeria directly impacting neighboring economies. More than 70 percent of the population in the Sahel and West Africa region lives on less than US\$ 3.10 per day, and more than 50 percent of the population lives below the poverty line with less than US\$1.90 per day³. According to UNDP's Human Development Report, the Region has an average development index of 0.46 and most of those countries are in the category of countries with "low human development". Only Cabo Verde and Ghana are ranked in the category of countries with "average human development".

3. Climate change impacts aggravate the Broader West Africa Region's development challenges.

Although this Region is only responsible for a fraction of global energy related Green House Gas (GHG) emissions, it will be highly impacted by climate change with an expected increase in floods and droughts. Therefore, the Region will need to invest in adaptation measures in the forthcoming decades. According to the 2018 World Bank report "Groundswell: Preparing for Internal Climate Migration", there will be around 90 million climate internal migrants in Sub-Saharan Africa (SSA) by 2050 if no actions are taken to fight climate change. This will impact the ability of those countries to achieve their Sustainable Development Goals (SDGs) and attract Foreign Direct Investment (FDI). Plus, these challenges in turn considerably complicate the implementation of regional strategies aimed at fostering socio-economic development.

Sectoral and Institutional Context

4. The energy services quality and the cost of power in the Broader West Africa Region hampers its social, economic and industrial development. Countries face interrelated challenges of energy access, energy security and climate change simultaneously. Electricity shortages in urban areas and lack of access to modern, affordable and reliable energy services in rural areas are inter-linked to a variety of economic, social, environmental and political problems. The electricity systems in the Region face challenges due to the growing gap between demand, existing supply and limited capital to invest. In 2017, excluding Nigeria, the Broader West Africa Region's total electricity generation installed capacity was 18 GW. Power systems are often small, ranging from 15 MW installed electricity generation capacity for Guinea Bissau to slightly more than 1 GW in Cote d'Ivoire and Ghana and 4 GW in Nigeria. The Broader West Africa Region has an average yearly consumption per capita of 188 kWh while Northern Africa and the South Africa Region have an average yearly consumption per capita of around 1,500 kWh and 2,000 kWh, respectively. The cost of generation in most countries in the Region is high – above US\$ 0.20-0.25 per kWh – mainly because of the high dependency on heavy fuel oil (HFO) and diesel, and for landlocked countries the need to import such fuels over long distances. A few countries in the Region such as Ghana and Cote d'Ivoire have lower cost of generation, closer to US\$ 0.12 per kWh thanks to a more cost-competitive energy mix and a larger grid.

³ World Bank, 2016, *Poverty in a Rising Africa: Africa Poverty Report*



5. Two thirds of the population in the Sahel and West Africa Region, representing more than 245 million people⁴, do not have access to electricity with large disparities between the rural-urban areas as well as between countries in the Region. The Broader West Africa Region has a 34 percent average access rate. Large disparities can be observed in the electrification rates within the Region itself, from 18 percent in Burkina Faso to 71 percent in Cape Verde. Significant disparities exist also between rural and urban populations such as in Burkina Faso where 58 percent of the population in urban areas are connected while only 3 percent are in rural areas. From the 245 million people that do not have access to electricity, two countries, Nigeria and Niger, host half.

6. The West African Power Pool (WAPP) was created to support the regional integration of the different country grids and with the support of the World Bank, WAPP is overseeing the construction of regional high voltage transmission lines and of a regional electricity market. Following the vision that energy resources available in the Broader West Africa Region can be exploited for the mutual benefit of all countries, WAPP was created at the ECOWAS Conference of Heads of State and Government in 1999. Covering 14 of the 15 countries of the regional economic community⁵, WAPP's mandate is to oversee the regional integration of electricity grids to ensure technical adequacy of supply and demand as well as to establish a regional electricity market. To do so, WAPP oversees all electricity transport and bilateral exchanges of electricity through regional interconnections in the electricity grid above 130 kV. WAPP has also a mandate on soft transversal issues, notably on capacity building activities relevant to all of its members. The World Bank has developed a strong partnership with WAPP by supporting regional projects focusing mostly on high voltage interconnection transmission lines and capacity building. As presented further in Annex 4, the World Bank finances large transmission lines such as the OMVG (Guinea, Guinea Bissau, The Gambia, Cote d'Ivoire), CLSG (Cote d'Ivoire, Liberia, Sierra Leone, Guinea), OMVS (Kayes-Tambacounda), North-Core Transmission (Nigeria, Niger, Benin, Burkina Faso) and the Guinea-Mali Interconnector with WAPP acting as the Implementing Agency for some of these projects.

7. WAPP has the mandate to identify and prepare regional power plants connected to the high voltage regional network and cross-border transmission lines. Since its creation, the WAPP Secretariat has taken a leading role in the development of regional integration infrastructure and implementation of priority projects identified in the ECOWAS Master Plan for the Generation and Transmission of Electrical Energy. The Master Plan approved by the ECOWAS Heads of State forms the basis for the development of regional projects. Once projects are in the Master Plan, WAPP has the full authority to deploy funds towards project preparation, including feasibility studies, environmental and social impact assessments (ESIA), Resettlement Action Plans (RAP), and related capacity building activities. There is also an agreed upon mechanism between WAPP and the governments to involve the utilities and the line ministries at each step of the preparation of those regional investments. An update of the Master Plan has been launched early 2018 and will be concluded by the end of 2018. The 2012 Master Plan identified 36 priority regional projects, including two 150 MW Regional Solar Parks in Burkina Faso and Mali. Given the new

⁴ World Bank, 2017, *The State of Electricity Access Report (SEAR)*

⁵ Namely: Benin, Burkina Faso, Ghana, Gambia, Guinea, Guinea Bissau, Ivory Coast, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo.



price dynamics for solar PV, additional solar projects are expected to be identified in the 2018 Master Plan update.

8. WAPP has also the mandate to plan infrastructure supporting regional integration of electricity markets but it has limited experience with variable renewable energy (VRE) electricity. As WAPP has very limited experience in preparation of solar projects and integration of VRE, its capacity with this regard needs to be increased through a multifaceted technical assistance package. The WAPP Information and Coordination Center (ICC), currently under construction, will serve as the central monitoring and electricity trading accounting hub of the WAPP region. The center will enable to effectively monitor VRE electricity production and VRE production cross-border exchange. Therefore, it will improve the reliability of WAPP's future interconnected power system. Being able to effectively monitor VRE generation forecasts and production data across countries connected to the WAPP network will be key to support the operation of the entire interconnected system, in particular as the expansion of solar PV in the region's electricity systems starts to increase significantly.

9. The continuous decline in solar electricity generation prices and of battery storage is generating considerable interest in the Region as substantial investments in cheaper, cleaner and reliable sources of electricity generation are needed. The Region's energy mix is mostly comprised of diesel, HFO and hydropower, with some larger countries, such as Cote d'Ivoire, having access to natural gas. Given recent evolution in solar prices, large-scale solar photovoltaic (PV) plants could become critical to reduce the Region's dependence on fossil fuels while supporting a shift towards cleaner and less expensive source of electricity. Most countries in the Region are reviewing their least-cost generation plan to include more solar generation in the energy mix as observed prices for solar PV obtained recently through competitive procurement of electricity generation, such as reverse auctions, in several developing countries are between US\$ 0.05-0.10 per kWh⁶. However, such power purchase agreement (PPA) prices have not yet been achieved in West Africa due to issues such as the lack of organized competition in procuring solar generation and the off-takers lack of bankability, with the exception of Senegal's Scaling Solar initiative. As the trend of decreasing solar PV prices is expected to continue, the Broader West Africa Region has a possibility to benefit from this market development to increase its power generation by harnessing its large solar potential. However, due to the intrinsic variability of solar electricity generation, the limited flexibility of the other electricity generators in the grid and the limited electricity dispatch capacities, grids have technical limits in integrating solar electricity.

10. Regional integration and cost-competitive storage will significantly increase the absorption rate of VRE into electricity grids in West Africa in the short-term. The WAPP primary regional electricity transmission network is expected to be completed by 2021. Resulting greater ability to draw power from regional sources will increase grid stability and improve VRE integration potential. The decreasing cost of battery storage will also play a crucial role in supporting VRE integration by reducing the variability of the electricity production and shifting the production to the high demand hours of the day. As the cost of Li-ion battery storage fell by 70 percent between 2010-2016, and is expected to fall by an additional 50-60 percent by 2030⁷, grid-connected storage or hybrid solar storage power plants can cost-competitively increase the share of VRE in the Region while supporting the grid and dispatching power during evening

⁶ World Bank, 2017, [What Drives the Price of Solar Photovoltaic Electricity in Developing Countries?](#), LiveWire 72.

⁷ IRENA, 2017, *Electricity Storage and Renewables: Costs and markets to 2030*.



peak demand. A World Bank financed study on “storage applications in the WAPP utilities and countries” will provide further details on key storage applications for the Region. Additionally, Concentrated Solar Power (CSP) is another solar generation technology that offers the potential benefit of thermal storage to meet night time peak electricity demand⁸. This shift is also expected to promote energy security in the Region. There is a political momentum and a broad recognition at the regional level of the potential benefits in mobilizing solar energy to diversify electricity supply further.

11. With limited fiscal space, West African countries are increasingly shifting towards private sector participation to deploy grid-connected solar PV generation projects. The Region is endowed with high solar irradiation especially in the Sahel where Niger, Burkina Faso and Mali have the highest irradiation of the Region with an average global tilted irradiation (GTI) above 2,200 kWh per m² per year. To reduce their cost of generation and diversify their energy mix, most countries in the Region are planning the development of grid-connected solar generation. With large financing needs over the sector entire value chain, the sector is increasingly relying on private sector that has proved strong interest in generation projects. Shifting from publicly financed projects to privately-owned ones enable to free scarce public and concessional resources for access agenda and other fiscal priorities.

12. However, the prevalence of sole-source and unstructured competitive process has impeded the timely delivery of cost-effective electricity supply by IPPs. Most IPPs in the Region have so far been negotiated bilaterally between the private sector and the utility. Such deals led to protracted negotiations, are complex to integrate in the utility generation plan, and are usually quite risky for the IPP, which therefore increases the IPP expected equity returns on investment and the PPA price. Transparent and fully-structured auction schemes have proven to be delivering lower PPA prices in countries such as Zambia, Senegal or India compared to negotiated deals, feed-in-tariff and unstructured competition. Organized standard reverse auctions provide a platform for IPPs to compete based on electricity tariff with de-risking options set ex-ante, as done in Argentina. The more recent Solar Park Auction concept, implemented in India and Dubai, helps to reduce further the development risk for IPPs by ensuring that land is secured, permits obtained, and power off-take and de-risking instruments are pre-arranged and made available prior to auction (e.g. evacuation line exists or is under construction and PPA contract, with the exception of the price, is ready). It thereby addresses upstream grid integration challenges as the park’s location is strategically decided where there are no or less constraints on the grid.

13. The small installed capacity of solar PV in the Region reveals important regulatory, structural and technical constraints such as limited IPP regulatory framework, weak planning capacity dispatch capacity, and overall grid integration challenges. The installed capacity of solar PV in the region (excluding Nigeria) at the end of 2017 was around 150 MW, representing 1 percent of the total regional installed electricity generation capacity. A handful of countries, Burkina Faso, Nigeria, Mauritania and Senegal, possess most of the existing solar generation. Utility scale solar electricity generation projects is currently largely made of small PV plants of up to 30 MW, too small to benefit from economies of scale. The three key constraints preventing a sustained and more ambitious uptake of solar PV are:

⁸ Assessing the feasibility of both CSP and PV with storage will be an integral part of SOP #1.



- (a) **Grid integration challenges.** The Region is composed of small individual national power systems, very limited spinning reserve and reactive power, outdated operation of networks, and the absence of automation in dispatch and adequate grid codes. Engineering and dispatching capacities are still very limited in the Broader West Africa Region and domestic experience with solar generation integration is modest in some countries and non-existent in others. Therefore, the integration of VRE is challenging from early stages, even at penetration levels of 5 to 10 percent, which are easily manageable in larger systems with automated dispatch. With first solar PV plants coming online in several countries, utilities are increasingly realizing the technical and financial challenges that integrating larger volumes of VRE represents and fear that without additional investments in dispatch and system operation, solar generation will increase the risks of load shedding and systems' defaults.

- (b) **Weak planning capacity.** Least-cost generation plans are key for utilities to organize and contract the future generation they will required in the medium to long-term. However, most utilities in the Broader West Africa Region do not have the planning capacities that are required to develop such a plan. Due to lack of planning, solar deployment in the Region has so far happened mainly through unsolicited bilateral proposals. As explained before, Solar Parks development could ensure minimal negative impact on the grid as the site of the Park is selected based on the ability at the substation and of the grid to integrate the power, and is part of the utility generation plan.

- (c) **Lack of IPP Regulatory Framework.** Few countries in the Region have fully effective IPP and/or public-private partnership (PPP) regulatory frameworks. A clear, consistent and enforceable regulation is key to gain investors' confidence, reduce IPP's perceived risks and ultimately expected equity returns. Project specific procurement schemes are developed under the country regulatory framework.

C. Proposed Development Objective(s)

Development Objective(s) (From PAD)

- 14. The Series of Projects (SOP)' development objective (PDO)** is to support the deployment of Regional Solar Parks in West Africa by leveraging private capital and enabling solar electricity dispatch and trade.

- 15. SOP project 1 (SOP #1) furthers this objective with project specific PDO to** (i) strengthen the regional technical capacity to integrate solar electricity into the grids and (ii) support the preparation of large-scale solar electricity generation.

Key Results

- 16. The achievement of the PDO for SOP #1 will be measured using the following key results:**
 - (a) A regional grid code revised and adopted by the WAPP;
 - (b) 100 people trained/certified in VRE integration and dispatch including female staff; and



- (c) 500 MW of solar generation capacity identified and prepared.

D. Project Description

17. The first project in the SOP, designed as a Technical Assistance to WAPP (SOP #1), will establish the enabling framework to accelerate the deployment of large-scale solar plants in the WAPP region through identification of bottlenecks, preparation of Regional Solar Parks and knowledge sharing, implemented at the regional level by the WAPP secretariat in collaboration with the utilities and authorities of the recipient countries. SOP #1 consists of a regional IDA grant of US\$ 21 million towards the identification and preparation of regional investments in solar electricity generation, grid infrastructure, dispatch and storage, along with capacity building support with particular focus on planning, regulations, technical knowledge and resource assessment and validation. In a letter to the World Bank dated March 20, 2017, the WAPP Secretariat has requested support from the World Bank to facilitate the feasibility assessment of selected investments in solar generation included in the current version of the WAPP Master Plan, namely the Burkina Faso and Mali Regional Solar Parks. Under the coordination of the WAPP, the pre-feasibility study and the pre-identification of potential sites for the Burkina Faso Regional Solar Park were completed in February 2017 with support from the EU and Kreditanstalt für Wiederaufbau (KfW) and the Mali Regional Solar Park pre-feasibility study was conducted in 2011. Both countries have expressed to the WAPP their interest for these projects and have supported the WAPP in developing terms of reference for the feasibility studies to be conducted under SOP #1. The SOP approach will enable the development of a common project template design addressing the specific issues that are shared with the different countries in the Region and that are impeding the deployment of solar PV. The viability and scope of prospective projects will be confirmed by activities carried out under SOP #1. The sequencing in SOP #2 and SOP #3 will ensure precise targeting of projects to client needs.

18. Component 1: Regional Solar Integration, Dispatch and Capacity Building (US\$ 8 million). The SOP #1 proposes to support WAPP's member utilities and WAPP to strengthen their dispatch, grid integration and planning capacities, and VRE production monitoring capabilities by:

- (a) Reinforcing the ICC⁹ with a post dedicated to VRE to enable the WAPP to monitor the volume and quality of intermittent power generation within the different interconnected zones.
- (b) Creating a WAPP Renewable Energy Task Force with all WAPP's member utilities, to (i) follow and support the development of VRE projects across WAPP countries; (ii) support an increased coordination and knowledge on VRE issues between WAPP countries and their respective utilities; and (iii) disseminate knowledge on planning, procuring and integrating solar generation into the grid.
- (c) Supporting the definition and implementation of a regional grid code with VRE connection requirements.
- (d) Capacity building and training implemented with the support of and in line with the World Bank-CIGRE Partnership with a focus on women and gender bias.

⁹ The control center, supplied by GE Alstom, supervised by EDF and funded by EU, has begun construction and is expected to be commissioned at the end of 2019 in Cotonou.



- (e) Reinforcing the WAPP staff capacities by financing key staff and consultants to support the design and implementation of the SOP.

19. Component 2: Regional Solar Parks Preparation (US\$ 13 million). The SOP #1 proposes to support WAPP's Planning, Investment Programming & Environmental Safeguards (PIPES) Department to:

- (a) Identify and prepare regional solar generation projects and associated grid investments, in close coordination with WAPP Members, IFC, MIGA and development partners. Such projects could include the Burkina Faso Regional Solar Park, the Mali Regional Solar Park, and solar generation facilities tied to hydropower plants. Activities would include the full spectrum of preparation activities (Grid integration studies, pre-feasibility, feasibility, preparation of safeguards documentation, project structuring, implementation arrangements determining ownership structure and operation, and transaction advisory for solar auctions preparation).
- (b) Roll out a solar resource ground measurement campaign in multiple locations across the region to improve overall knowledge of the solar resource, siting of solar plants, and to reduce uncertainties on the solar resource.

E. Implementation

Institutional and Implementation Arrangements

20. The WAPP Secretariat has been identified as best suited institution to implement technical assistance at a regional level and already has experience with regional World Bank project. The WAPP is a public international organization operating in the general interest of the regional power systems, with a view to ensuring reliable power supply throughout the Region. WAPP Members are made up of public and private power generation, transmission and distribution utilities involved in the operation of the West African power system. WAPP comprises 25 Member Utilities. The WAPP Secretariat has 3 main divisions: PIPES, ICC and Administrative and Finance Unit. The WAPP is already a successful implementing agency of the World Bank's large technical assistance programs in the Region and investments in transmission lines¹⁰. Plus, there is a considerable advantage in making WAPP the implementing agency of the proposed SOP as WAPP has been designated by virtue of the institutional mandate of ECOWAS to promote and develop infrastructure for power generation and transmission and coordinate power exchanges amongst ECOWAS Member States.

21. Dedicated staff within the WAPP and consultants to be hired to support WAPP will be responsible for the SOP #1 management and supervision. The WAPP has allocated to the SOP #1 a Project Director, an environment specialist, a capacity building coordinator and a financial management (FM) specialist. An expert consultant in VRE and integration will be hired under the SOP as well as a social specialist, an accountant, and a procurement specialist who will be working part-time for that project. The unit's scope of work will include: (i) supervision and verification of survey, design and preparation cost estimates of SOP #1 interventions, (ii) verification of design, bill of quantities and tender documents of SOP#1 activities, (iii) preparation of annual work plan for all SOP #1 activities and annual financial requirements, and (iv) supervision and reporting on SOP #1 implementation.



22. WAPP has well established coordination procedures with national counterparts in member states. The WAPP operations closely associate national counterparts to ensure appropriate and early buy-in from the utilities and Governments for each country involved in activities spanning technical, economic, financial, environmental and social, commercial, regulatory and transactional supports. Focal points would be designated within utilities as well as line ministries of the concerned countries to participate alongside the WAPP Secretariat in dedicated committees established to follow, review and approve deliverables to be prepared under the Component 2 of SOP#1. The WAPP Secretariat will support the preparation of national safeguards instruments, including the identification of project affected people, approved by the relevant national authorities.

F. Project location and Salient physical characteristics relevant to the safeguard analysis (if known)

The location of the project is still unknown at this point. This will be determined during project implementation as the pre-feasibility and feasibility studies are conducted.

G. Environmental and Social Safeguards Specialists on the Team

- Alexandra C. Bezeredi, Social Safeguards Specialist
- Emmanuel Ngollo, Environmental Safeguards Specialist
- Paivi Koskinen-Lewis, Social Safeguards Specialist
- Leandre Yameogo, Environmental Safeguards Specialist
- Gertrude Marie Mathilda Coulibaly Zombre, Social Safeguards Specialist

SAFEGUARD POLICIES THAT MIGHT APPLY

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	Environmental Assessment OP/BP 4.01 is triggered, as the SOP#1 is a Technical Assistance project that will support preparation of pre-feasibility as well as feasibility studies, capacity building and legal and regulatory reviews in the WAPP’s Energy Sector. No physical investments or activities will take place anywhere in the participating countries during project implementation. Since SOP#1 entails to finance the studies mentioned above, a generic ToR for ESIA’s was prepared and cleared by the Bank prior



to appraisal. The ToR for ESIA will be customized and used in relation to identified potential impacts and mitigation measures for the solar infrastructure in each specific country, including for dam safety, per the pre-feasibility and the feasibility studies in the identified sites, during SOP #1 implementation.

Performance Standards for Private Sector Activities OP/BP 4.03

Natural Habitats OP/BP 4.04	Yes	Since the Project will involve subprojects pertaining to the pre-feasibility and feasibility studies for the hydro-power investments or activities, including transmission lines that could affect Natural habitats with connection to wetlands and other critical habitats (mangroves, protected areas, etc.), the OP/BP 4.04 is triggered to cover these issues, should such activities be carried out during project implementation.
Forests OP/BP 4.36	No	The Project will not finance subprojects with activities dealing with deforestation or afforestation during implementation, thus the OP 4.36 on Forest is not triggered.
Pest Management OP 4.09	No	The project will not finance the procurement and/or use of pesticides
Physical Cultural Resources OP/BP 4.11	Yes	The project is anticipating affecting physical cultural properties as pre-feasibility and feasibility studies may yield investment sub-projects with construction/ rehabilitation in areas where physical cultural resources, including sites with archeological importance and cultural relics may be uncovered. Therefore, OP/BP 4.11 is triggered and due diligence will be applied, should such physical cultural resources are uncovered during project implementation.
Indigenous Peoples OP/BP 4.10	No	There are no indigenous people in the countries of the ECOWAS sub-region.
Involuntary Resettlement OP/BP 4.12	Yes	The SOP # 1 is Technical Assistance (TA), and will not finance civil works. It will, however, finance the preparation of pre-feasibility and design studies, as well as feasibility studies and therefore ToRs for an ESIA have been prepared and cleared by the Bank prior to appraisal and disclosed on April 25th, 2018 by the WAPP Secretariat and the Bank. These ToRs will be used in relation to identifying potential impacts and mitigation measures, including the preparation of Resettlement Action Plans where



		necessary, for each of the solar infrastructure to be examined during SOP #1.
Safety of Dams OP/BP 4.37	Yes	The implementation of the SOP#1 will entail the preparation of hydro-connected solar development projects next to or floating on existing hydropower dams. SOP#1 could thus possibly finance preparation of solar PV plants that are dependent on the performance of an existing dam(s). Based on the complexity and environmental and health safety of such operation(s), OP/BP 4.37 is triggered in anticipation to such event(s), even if the related due diligence will be carried out later during the project implementation after the selection of the hosting Dam reservoir(s).
Projects on International Waterways OP/BP 7.50	No	The implementation of the SOP#1 will not involve extraction of water from any international waterways (river, canal, lake or any water body that flows through two or more states) or tributaries of surface water bodies. OP/BP 7.50 is not triggered.
Projects in Disputed Areas OP/BP 7.60	No	The project will not be located in disputed area in any of the beneficiary countries.

KEY SAFEGUARD POLICY ISSUES AND THEIR MANAGEMENT

A. Summary of Key Safeguard Issues

1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:

This first phase of the Series of Projects (SOPs) does not involve any physical investments and therefore does not have any environmental or social impacts. However, the subsequent phases will involve civil works and to this end, the Borrower has prepared Terms of Reference for an ESIA/RAP to be prepared as part of the project implementation to analyze the potential impacts and describe their mitigation plans. At this stage, the actual locations have not been identified and the impacts are not known. Once the sites are identified, environmental and social screening mechanisms will be used to determine the type of instruments to be developed prior to project implementation.

2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:

In the subsequent phases, there is potential for impacts related to land acquisition, such as physical or economic displacement of people. Subsequently, the SOP activities will include both “brownfield” transmission power line network rehabilitation capacity and efficiency enhancement sub-projects as well as new “greenfield” power transmission network construction sub-projects in candidate countries. In addition, the proposed SOPs will finance the refurbishing and replacement of some existing facilities, especially some existing power stations and substations that may generate hazardous wastes, which will need to be managed properly. In the same token, new power stations and substations will also be constructed at different sites, generating environmental impacts to be managed.



3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.

n/a

4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.

The Borrower has prepared Terms of Reference for an Environmental and Social Impact Assessment to be carried out during the implementation phase as part of the feasibility studies. The ESIA will also contain a stand-alone Resettlement Action Plan, in case land acquisition is necessary. The ToR has been cleared by the Bank and disclosed on the WAPP website and by the Bank on April 25th, 2018. As the project activities pertain to technical Assistance and given the limited capacity pertaining to solar power generation in the WAPP countries, the SOP #1 activities will support preparation of pre-feasibility as well as feasibility studies, capacity building, safeguards, project structuring, implementation arrangements that determine ownership structure and operation and legal and regulatory changes in the WAPP’s Energy Sector. Because new PV power stations and substations will also be constructed at different identified sites during subsequent SOP implementation in candidate countries, generating environmental impacts to be managed, there is a need for capacity building to safeguards these forthcoming operations.

5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.

Key stakeholders include the WAPP Secretariat, the national power companies as well as the Ministries of Energy in the ECOWAS countries, in the first stage most likely Mali and Burkina Faso. Once sites have been chosen, the affected people can also be identified. The preparation as well as implementation of the ESIA/RAP will be done in consultation with affected people, as well as key energy sector stakeholders and taking into account gender aspects and vulnerable groups.

B. Disclosure Requirements

Environmental Assessment/Audit/Management Plan/Other

Date of receipt by the Bank 12-Apr-2018	Date of submission for disclosure 25-Apr-2018	For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors
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"In country" Disclosure

Benin
25-Apr-2018

Comments
disclosed on WAPP website www.ecowapp.org.

Resettlement Action Plan/Framework/Policy Process

Date of receipt by the Bank	Date of submission for disclosure
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"In country" Disclosure

C. Compliance Monitoring Indicators at the Corporate Level (to be filled in when the ISDS is finalized by the project decision meeting)

OP/BP/GP 4.01 - Environment Assessment

Does the project require a stand-alone EA (including EMP) report?

No

OP/BP 4.04 - Natural Habitats

Would the project result in any significant conversion or degradation of critical natural habitats?

No

If the project would result in significant conversion or degradation of other (non-critical) natural habitats, does the project include mitigation measures acceptable to the Bank?

NA

OP/BP 4.11 - Physical Cultural Resources

Does the EA include adequate measures related to cultural property?

NA

Does the credit/loan incorporate mechanisms to mitigate the potential adverse impacts on cultural property?

NA

OP/BP 4.12 - Involuntary Resettlement

Has a resettlement plan/abbreviated plan/policy framework/process framework (as appropriate) been prepared?

NA

If yes, then did the Regional unit responsible for safeguards or Practice Manager review the plan?

NA

OP/BP 4.37 - Safety of Dams

Have dam safety plans been prepared?

NA

Have the TORs as well as composition for the independent Panel of Experts (POE) been reviewed and approved by the Bank?

NA



Has an Emergency Preparedness Plan (EPP) been prepared and arrangements been made for public awareness and training?

NA

The World Bank Policy on Disclosure of Information

Have relevant safeguard policies documents been sent to the World Bank for disclosure?

Yes

Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?

Yes

All Safeguard Policies

Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?

Yes

Have costs related to safeguard policy measures been included in the project cost?

Yes

Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?

Yes

Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?

Yes

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