GOVERNMENT OF SOMALILAND

MINISTRY OF ENERGY AND MINERAL RESOURCES

SOMALI ELECTRICITY ACCESS PROJECT (SEAP)

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

FINAL

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ACRONYMS AND ABBREVIATIONS

Abbreviation	Description
ADRA	Adventist Development and Relief Agency
BE	Bank Executed
BEBR	Bank Executed on Behalf of the Recipient
BP	Bank Policy
CAPEX	Capital Expenditure
CEEH	Candlelight for Environment, Education and Health
CIP	Capacity Injection Project
CPF	Country Partnership Framework
CGM	Catalytic Grant Manager
DA	Designated Account
DC	Direct Current
DFID	U.K. Department for International Development
DG	Director General
EAFS	External Assistance Fiduciary Section
ECoP	Environmental Code of Practice
EIRR	Economic Internal Rate of Return
ESMAP	Energy Sector Management Assistance Program
ESMF	Environmental and Social Management Framework
ESRES	Energy Security and Resource Efficiency Programme
EU	European Union
FCV	Fragility, Conflict & Violence
FM	Financial Management
GBOPA	Global Partnership on Output-Based Aid

Abbreviation	Description
GDP	Gross Domestic Product
GEEL	Growth, Enterprise, Employment and Livelihoods
GHG	Greenhouse Gas
GIS	Geographic Information System
GNI	Gross National Income
GoSl	Government of Somaliland
GRS	Grievance Redress Service
HEIS	Hands-on Expanded Implementation Support
HIPC	Highly Indebted Poor Country
IA	Implementing Agency
IDA	International Development Association
IFC	International Finance Corporation
IFI	International Financial Institution
IPF	Investment Project Financing
IPSAS	International Public Sector Accounting Standards
ISA	International Standards on Auditing
ISN	Interim Strategy Note
JNA	Joint Needs Assessment
LED	Light Emitting Diode
LG	Lighting Global
MoEMR	Ministry of Energy and Mineral Resources
MPF	Multi Partner Fund
NDP	National Development Plan
NGO	Non-governmental Organization
NIS	Nordic International Support

Abbreviation	Description
NPP	National Procurement Procedures
NPV	Net Present Value
NRC	Norwegian Refugee Council
ODA	Overseas Development Assistance
OP	Operational Policy
OPEX	Operating Expenditure
PAYG	Pay As You Go
PDO	Project Development Objective
PFM	Public Financial Management
PFS	Project Financial Statements
PHRD	Policy and Human Resources Development
PIM	Project Implementation Manual
PIU	Project Implementation Unit
PP	Procurement Plan
PPA	Public Procurement, Concessions and Disposal Act
PPD	Public Private Dialogue
PPF	Powering Progress Fund
PPSD	Project Procurement Strategy for Development
PSC	Project Steering Committee
PV	Photovoltaic
RE	Recipient Executed
RISE	Regulatory Indicators for Sustainable Energy
SBCF	Somalia Business Catalytic Fund
SCD	Systematic Country Diagnostic
SCoA	Standard Chart of Accounts

Abbreviation	Description
SCORE	Somali Core Economic Institutions and Opportunities
SDG	Sustainable Development Goal
SDRF	Somalia Development and Reconstruction Facility
SEAP	Somali Electricity Access Project
SET	Somali Energy Transformation Project
SFMIS	Somalia Financial Management Information System
SHS	Solar Home System
SIDA	Swedish International Development Cooperation Agency
SORT	Systematic Operations Risk-rating Tool
STEP	Systematic Tracking of Exchanges in Procurement
TA	Technical Assistance
TTL	Task Team Leader
UCS	Use of Country Systems
UNDB	United Nations Development Business
UNDP	United Nations Development Program
USAID	United States Agency for International Development
WBG	World Bank Group

EXECUTIVE SUMMARY

Introduction

This document presents the Environmental and Social Management Framework (ESMF) for the Somali Electricity Access Project (SEAP). The ESMF ensures that the project activities are compliant with the relevant requirements of national policies, regulations and legislations as well as the World Bank Safeguards Policies and Procedures. The objective of this ESMF is to set out the principles, rules, guidelines and procedure to assess the environmental and social impacts and monitoring to ensure that environment and social aspects are duly considered.

This ESMF only applies to those activities that will be financed, either directly or indirectly, by SEAP, and not to any other activities that a supported beneficiary may be otherwise involved in; all language in this ESMF should be interpreted under this light.

Project Development Objective

The Project Development Objective is to expand access to electricity in targeted urban, peri-urban, and rural communities in Somaliland.

The Project consists of three components as indicated below:

- Component 1: Electrification of households and small businesses through standalone solar home systems
- Component 2: Enabling electrification through solar powered/hybrid mini-grids
- Component 3: Technical assistance, capacity building and project management

Project Description

Component 1: Electrification of households and small businesses through standalone solar home systems

The goal of component 1 is to reduce market barriers for the private sector to provide modern energy access through standalone solar home systems to households and small businesses in Somaliland without electricity. Component 1 will fund a range of market-building supply- and demand-side interventions, with the overall objective of improving access by removing barriers to scale for Somali distributors of quality-approved standalone solar home systems. Component 1 will be executed by the World Bank on behalf of the Government of Somaliland.

Component 2: Enabling electrification through solar powered/hybrid mini-grids

Component 2 will focus on analytical work that will support the mini-grid sector in Somaliland, supporting activities that will establish a pipeline of mini-grid projects, and define delivery/business models for their implementation.

Component 3: Technical assistance, capacity building and project management

Component 3 will support a range of activities to strengthen the capacity of the Ministry of Energy and Mineral Resources of the Government of Somaliland and the for overall energy sector management, power and access planning, and implementation of future development projects

Project Beneficiaries

The Project aims to provide unelectrified Somali households in urban, peri urban and rural areas with affordable and reliable energy access.

The project also aims to support the private standalone solar device sector, which has become the main agent of energy service provision.

Project Environmental and Social Baseline

The specific location of all SEAP related activities is not known at this time but it is expected to be in urban and rural areas of Somaliland. Chapter 4 of this report describes the overall baseline condition of Somaliland in terms of biophysical environment, as well as the socio-economic context. Existing environmental and socio-economic conditions will, in many cases, provide a basis for predicting impacts of the project components and sub-components. The project activities will be implemented within premises of existing firms, which therefore mean that they will not have any direct interactions with indigenous people lands and territories.

Policy, Legal and Institutional Frameworks

Policy and legislation with respect to the environment is currently evolving in Somaliland, in terms of assessing the potential impact of such policies and regulations on the environment, and how they could contribute to environmental conservation and sustainable livelihood improvement.

In recent years Somaliland has effected a constitution within which article 12 addresses: Public Assets, Natural Resources and Indigenous production. Although there are no Environmental Policy and Act in place, an Environmental and Social Assessment Framework has been produced through the SDF program. Protection and use of Somaliland water resources is the responsibility of the Ministry of Water Resources that has put a policy, act and regulatory framework in place.

Safeguard Policies and Triggers

The project has been assigned "Category B Partial Assessment "as it is likely to have limited and reversible environmental impacts, that can readily be mitigated. There are no significant and/or irreversible adverse environmental issues anticipated from the activities to be financed under SEAP. The ESMF has therefore been prepared to guide the selection and implementation of subprojects that will require precautionary measures related to EA (OP/BP 4.01). Further, the project will comply with the World Bank's safeguard policy on Environmental Assessment (OP/BP 4.01), where potential risks and impacts are anticipated. In this case, the project will implement alternative measures to avoid, minimize, mitigate, manage or compensate adverse environmental impacts. Avoidance measures will be prioritized over mitigatory or compensatory measures. Additionally the project will enhance positive impacts in project selection, location, planning, design, implementation and management

Potential Environmental and Social Impacts of the Project

The core issue in regards to increasing the uptake of solar home systems (SHS) is the long-term implication of the increased number of battery energy storage systems (BESS). This impact requires a strategic solution through a program for battery disposal/recycling, in which SHS distributors play a role. The entire management process including de-manufacturing, collection, storage, recycling, transport and disposal may present a challenge to this project, given the scope of these management operations.

Additional risks would include weak labor practices among SHS companies, such as possible use of child or forced labor, or inadequate occupational health and safety (OHS) practices.

Other project activities do not pose such or additional risks, since they relate to analytical work, technical assistance, capacity building and training.

Monitoring and Mitigation Measures

In order to address the aforementioned potential adverse impacts, an environmental and social screening process has been proposed under this ESMF, and will be applied in such a way as to ensure that potential negative impacts of the project are prevented and/or mitigated appropriately, and positive impacts are enhanced.

The activities envisaged under SEAP are low-risk. All products to be procured under the project must adhere to the quality standards and testing methods developed by Lighting Africa/Global[1].

[1] https://www.lightingglobal.org/where-we-work/lighting-africa/

A criteria for the selection of SHS companies to participate in the project will be developed and Lighting Africa/Global compliance clauses will be included in funding agreements with the private sector. The criteria and compliance to Lighting Africa/Global quality assurance frameworks will form the E&S requirements to be established by the catalytic grant manager under component 1 of the project.

The catalytic grant manager will ensure qualified SHS companies sell and/or install SHS as per the funding agreement and will be required to have an ESMS that will focus on key risks for this component (labor issues, battery/waste management, and OHS issues).

The project will also be monitored to ensure that it puts adequate safeguards in place to address governance issues. The project's Task Teams will be required to consider as best practice, putting in place transparent and accessible selection criteria that will ensure that companies owned by women, youth and people with disabilities, have equal chance for consideration for funding under the project through the catalytic grant manager.

The ESMF incorporates aspects related to solid waste from solar PV systems and a project-specific environmental code of practice (ECoP) has been developed as a guidance on approach for the collection, transport, storage and disposal of spent batteries, with the aim of ensuring that risks to the environment and human health are prevented or mitigated. Apart from providing approaches to the management of spent PV batteries, the ECOP also seeks to inform discussion and build awareness of all stakeholders, including rural community members, vendors/suppliers of products and service providers, around safe management of used batteries

Project Implementation Arrangements with a Focus on the ESMF

The successful implementation of the ESMF depends on the commitment of the private sector and related institutions, and the capacity within the institutions to apply or use the ESMF effectively, and the appropriate and functional institutional arrangements, among others. The details of institutional arrangements, the roles and responsibilities of the institutions that would be involved in the implementation of the ESMF, including primary and secondary institutions, are presented in Table 0-1 below.

Table 0-1 Institutional Arrangements for Implementation of the ESMF

Project Activities	Role of Catalytic grant manager	SHS Distributor
SHS company funding application	• Incorporates E&S requirements (ESMS, clean track E&S record, applies Exclusion Criteria for SHS Companies, and Contractors) into application and grant agreements • Conducts review of SHS companies' ESMS	SHS companies prepare elements required for ESMS in line with E&S requirements and good industry practises Submit statement of current practice for battery disposal/ recycling
SHS company operations	• Conducts sample performance checks, as needed	Remain in good compliance to all relevant standards. Participate in battery disposal/recycle program
Monitoring	• Oversees (under TOR for general monitoring of SHS companies) monitoring E&S compliance by independent company	Conduct self-monitoring, provide relevant documentation

Institutional and Implementation Arrangements

The project will be implemented by The Ministry of Energy and Minerals (MoEM), Government of Somaliland (GoSl), for Components 2 and 3. Since the Recipient's capacity to implement activities is insufficient, at the request of the government, Component 1 will be implemented by the Bank on behalf of the government through the competitive procurement of a firm or consortium of firms to manage Component 1 activities. This same firm is expected to utilize an approach that addresses challenges related to technical capacity, governance issues including regional and clan dynamics, and the need to remain neutral and impartial in delivering a successful project. This is intended to reduce transaction costs of managing multiple individual consulting firms and increase synergy and cohesion across the project. GoSl will be fully engaged in certain procurement activities in order to foster project ownership, including the processes of preparing Terms of References, developing evaluation criteria for selection of firms and review of deliverables, especially for Components 2 and 3.

Public Consultations and Disclosure

The World Bank Safeguards Operational Policy /Bank Procedures OP/BP 4.01 Environmental Assessment requires public consultation with affected groups and other stakeholders about the project environmental/social impacts and take their view into account. The Constitution of Somaliland and other statutes also require public consultations in the development process.

During the project preparation process, discussions were held on 23 May 2018 at the Ministry of Energy and Minerals and the main discussion points was the potential positive and negative environmental and social impacts.

Minutes of the consultations are documented in Annex 6. The ESMF report will be disclosed on the Ministry's website as well as the World Bank InfoShop.

Cost Implications of the ESMF

Low capacity within The Ministry of Energy risks undermining the ability of recipient-executed project activities to be rolled out in a timely and effective manner. To mitigate this risk, the project will contribute to developing capabilities of sector institutions to oversee private-sector led delivery of energy services. Technical capacities in the ministries are extremely limited; as such, a third-party firm will need to be hired to administer the bulk of project activities on behalf of the government under Component 1.

The ESMF has assessed the implementing agencies capacities and has proposed measures to enhance safeguards capacity to improve environmental and social performance during project implementation; this will include safeguards training for PIU. The budget proposed to enhance safeguard capacity is USD.

The budget will cater for capacity building of the PIU related to safeguard compliance, incorporate E&S requirements (ESMS, clean track E&S record, applies Exclusion Criteria for SHS Companies, and Contractors) into application, grant agreements and conduct review of SHS companies' ESMSs, Monitoring & Evaluation and Implementation of ESMF.

Grievance Redress Mechanism

The project implementing agencies will set up a project -specific Grievance Redress Mechanism (GRM) for people to report concerns or complaints, if they feel unfairly treated or are affected by any of the subprojects.

The mechanism will amongst other things: (a) provide information about project implementation; (b) provide a forum for resolving grievances and disputes at the lowest level;(c) resolve disputes relatively quickly before they escalate to an unmanageable level;(d) facilitate effective communication between the project and affected persons; (e) win the trust and confidence of project beneficiaries and stakeholders and create productive relationships between the parties. The mechanism is envisaged to be at multiple levels and will address such complaints, including logging, tracking, and resolving grievances promptly during and after the implementation of SEAP.

The implementing agencies will have dedicated person or unit to be responsible for setting up and maintaining the GRM that allows general public in the project area and affected communities or individuals to file complaints and to receive responses in a timely manner. The system will also record and consolidate complaints and their follow-up. This system will be designed for

handling complaints perceived to be generated by the project or its personnel. It may also include disagreements about compensation and other related matters

1 INTRODUCTION AND PROJECT CONTEXT

1.1 PROJECT CONTEXT

The Somali energy sector is one of the most underdeveloped in the region. Low electrification rates, especially in rural areas, high cost of power, high technical and commercial losses, dependency on imported petroleum products for electricity generation, and dependency on imported biomass resources for cooking mean that only a very small fraction of the Somali population has access to affordable, safe, reliable, and predictable energy services. Both public and private sector energy actors are highly capacity constrained, and weak legal and regulatory frameworks, limited financing and investment, and lack of data for effective decision making continue to hold back sector development.

The electricity access rate is estimated at 15 percent, meaning that around 11 million Somalis lack access to electricity services. Access depends significantly on demographic variables, with urban access estimated at 33 percent, and rural access at 4 percent. With an average household size of 5.9, this translates to approximately 1.7 million un-electrified households nationwide. Private sector players supply more than 90 percent of power in urban and peri-urban areas using local private mini-grids, having invested in diesel-based systems of between 500 kVA to 5000 kVA installed capacity per mini-grid. These mini-grids are usually zoned, with each operator building, owning, and operating the generation, transmission, distribution and maintenance, as well as collecting tariffs. Thus, more than 68 percent of urban/peri urban households receive electricity service, though at a high cost that might reach a maximum of $1/kWh, making Somali region one of the costliest places in the world to buy power. The latest ESMAP Regulatory Indicators for Sustainable Energy (RISE) report found that Somali region ranks in the upper 5% globally for power cost, and in the upper 15% globally for power expenditure as a share of GNI per household. As a result, access levels remain low despite many households living near mini-grid power lines.

The proposed project aims to focus on improving energy access via standalone solar solutions for both households and small enterprises given the country and sector context, as well as the modest financing envelope. This will take the form primarily of providing a package of incentives to support local entrepreneurs to develop new ventures or scale up existing activities. The project will especially target existing “first movers” who have already demonstrated independent interest and capability in the solar home systems sector. A smaller allocation for mini-grid activities will focus on studies aimed to complement and build upon ongoing DFID and EU-led initiatives around this technology, and the findings of the Master Plan that is currently under preparation with World Bank financing. The project will also focus on building capacity within government agencies, while recognizing the need for robust third-party support to deliver the project activities.

In addition to providing increased energy access, the project will set an invaluable precedent for Somali energy sector development as well as international donor engagement. The project design draws on a number of current best-practice off-grid interventions, including: (i) it constitutes a pilot engagement on standalone solar home systems that is anticipated to further prove and develop the market for future public and private sector engagement; (ii) it brings a public sector intervention to scale-up private sector delivery of energy services; (iii) it contributes to the further scaling up the World Bank / IFC 'Lighting Africa' model for achieving off-gird electrification, particularly on quality assurance; and (iv), by mobilizing external debt from private-sector financial institutions, it provides an important example of Maximizing Finance for Development (MFD) implementation in a fragile context.

1.2 PROJECT DESCRIPTION

The Project will be implemented across the entire Somaliland. While there are tremendous needs with respect to energy access, the fragile and complex operating environment necessitates a selective approach to supporting the effective delivery of affordable and sustainable energy services. Somali's private sector has impressively stepped up to deliver basic energy services in the aftermath of the protracted conflict of the 1990s. Nevertheless, these enterprises often lack the capital and latest technical, financing, and business model insights to scale their businesses. The core proposition of this project is that by leveraging these incumbent capabilities and activities, the overall quality of services they offer to their customers will be improved, especially as they are provided with technical and financial resources needed to deepen and broaden their geographic footprints.

1.3 PROJECT DEVELOPMENT OBJECTIVES

The Project Development Objective is to expand access to electricity in targeted urban, peri-urban, and rural communities in Somaliland.

The PDO-level indicators are the following:

- People provided with new or improved electricity service
- Generation capacity of energy constructed or rehabilitated

1.4 PROJECT BENEFICIARIES

The project will target households and communities, in collaboration with enterprises and government agencies in Somaliland.

The Project aims to provide unelectrified Somali households in urban, peri urban and rural areas with affordable and reliable energy access. Rural areas are characterized by low density of population, high levels of poverty, and nomadic lifestyles. These areas have extremely low or no connectivity to electricity as these areas are not deemed economically feasible targets for grid extension.

The project also aims to support the private energy sector, which has become the main agent of energy service provision. There is very limited financing or credit offered along the energy supply chain. Importers are unable to access loans and therefore buy goods with cash up front, limiting their ability to scale and take additional risk. Manufacturers and foreign-based distributors perceive high risk from businesses, and do not typically offer supplier credit. For consumers, finance for solar off-grid products is undeveloped. Somaliland has the building blocks in place to develop a strong private sector-based market for off-grid solar products. There is a demonstrated demand and need for electricity and off-grid solar products, and a variety of companies have already demonstrated strong capacity to reach off-grid consumers. Moreover, there is also a strong foundation of local entrepreneurial capacity among business people and leaders that can drive this initiative. Therefore, public resources will be used to harness private sector efficiencies by creating appropriate incentives to mitigate the risks of doing business in the country.

1.5 PROJECT COMPONENTS

The proposed Project comprises of the following components and subcomponents:

- Component 1: Electrification of households and small businesses through standalone solar home systems
- Component 2: Enabling electrification through solar powered/hybrid mini-grids
- Component 3: Technical assistance, capacity building and project management

1.5.1 Component 1: Electrification of households and small businesses through standalone solar home systems

The goal of this component is to reduce market barriers for the private sector to provide modern energy access through solar home systems to some of the households and small households in Somaliland without electricity. The activity targets (i) poorer households and small businesses in areas that cannot afford to connect to mini-grid services; (ii) households and businesses in these areas that are not sufficiently close to a mini-grid to be economically connected; (iii) isolated villages and smaller settlements where mini-grids do not make economic sense; and (iv) nomadic pastoralists whose livelihoods do not lend themselves to a fixed electricity connection.

The Somali market for standalone solar home systems is growing but nascent, facing a range of barriers to scale. Principal among these are: (i) limited access to working capital for inventory and investing in business infrastructure, as local banks still regard the solar sector as banks prefer lower-risk, safer returns from more established industries; (ii) competition and market spoilage from low-quality imitation products; (iii) low levels of consumer awareness around solar technology, particularly regarding the long-term benefits of high-quality products and how to identify these; and (iv) low affordability among end-consumers, and limited access to consumer finance.

In response to these challenges, this component will fund a range of market-building supply- and demand-side interventions, with the overall objective of improving access among off-grid households and small enterprises by removing barriers to scale for Somali distributors of quality-approved standalone solar home systems[2]. The proposed interventions (indicative allocations to each intervention are shown based on initial analysis performed during project preparation, but are intended to remain flexible to be able to react to changing market needs) are:

a. Catalytic Grants: Catalytic Grants that will enable the importation of inventories and growth capital to increase reach and service quality. Catalytic Grants will be awarded in one of two forms:
    i. Risk Mitigation Grants offered to both local Somali financial institutions and regional hard-currency off-grid energy lenders to buy down market and country risk for loans to Somali solar distributors. Risk Mitigation Grants will cover a pre-determined percentage of debt finance to distributors, and will be available for drawdown by lenders in the event of default. Depending on the level of utilization of the Risk Mitigation Grant, funds held for this Grant may be reallocated to the Expansion Grant at an intermediate point in the Project.
    ii. Expansion Grant to solar distributors triggered upon securing debt capital (with or without the Risk Mitigation Grant) or equity contribution. The Expansion Grant will increase enterprise liquidity, thus further reducing bank credit risk (when combined with the Risk Mitigation Grant), as well as providing growth funding for distributors to invest into key business functions such as marketing, training, and after-sales support. This Expansion Grant is also intended to further scale early pilots for providing consumer financing plans (including pay-as-you-

[2] While the term "solar home system" suggests predominantly residential applications, these devices also find widespread use in small-scale commercial activities such as refrigeration, hairdressing, and agri-processing.

go) that enable customers to pay in installments, thus spreading out payment over longer periods of time and improving affordability. Pending market response, the Expansion Grant could also be accessible to MFIs and local savings cooperatives seeking to grow their solar consumer loan portfolios.

b. Quality assurance: Interventions to limit availability of and demand for poor-quality and/or counterfeit products, including TA activities for national and regional governments, potentially in preparation for eventual adoption of Lighting Global quality standards.
c. Consumer awareness: Comprehensive consumer awareness campaigns with the objective of improving household understanding of how off-grid solar technology works, its benefits, how to operate, maintain and dispose of the products, and the importance of and how to identify quality products.

Management of the Catalytic Grant will be executed by the World Bank on behalf of GoSl. The World Bank will competitively select a firm or consortium of firms to provide the services under the scope of work of the Catalytic Grant Manager. The individual subcomponents under the Catalytic Grant may also be awarded through separate contracts. However, the Catalytic Grant manager will need to closely co-ordinate Expansion Grant administration, Risk Mitigation Grant administration, and matchmaking between distributors and financial institutions. Consumer awareness and quality assurance will be implemented by GoSl in Somaliland, though the Catalytic Grant Manger will be expected to provide inputs and guidance to these activities as necessary.

1.5.2 Component 2: Enabling electrification through solar powered/hybrid mini-grids

This component will support the mini-grid sector in Somaliland. The information available on existing mini-grids is scant, even though they are the default energy provider throughout the country. While the ongoing Power Master Plan Study (Master Plan), financed by the World Bank, will provide some clarity regarding the status quo, but additional sector studies will be required to define the appropriate way forward for mini-grid technology. While the Master Plan will provide the long-term vision for the sector, key development partners already have activities underway to support the scale up of mini-grids in Somaliland. For instance, DFID supports the £20M ESRES Program, which in its first phase is supporting the hybridization of six mini-grid sites with £5 million budget. Phase 2 will kick off in 2018, and will deploy the remaining £15 million. The EU has just completed another 6 community installations via the ADRA-implemented Somali Energy Transformation (SET) Project. With the considerable activities currently underway by other donors, the objective of this Component is to focus on supporting activities that will establish a pipeline of mini-grid projects, and define delivery/business models for their implementation.

Given the high investment costs associated with mini-grid development and the modest resources under the proposed project, the project's exclusive focus under this component will be on analytic work. Activities financed by SEAP will take into account the activities of DFID and other development partners in the Somali mini-grid space. Analytic work is expected to include the following activities:

a. Detailed geospatial mapping to undertake a more comprehensive inventorying of the current mini-grid situation in Somaliland, identify potential future sites, and estimate future location-specific demand;
b. Review of property rights and land issues pertaining to energy infrastructure investment;
c. Pre-feasibility studies for hybridization, operational enhancements, and densification of brownfield (existing) mini-grid sites
d. Pre-feasibility studies for greenfield (new) sites identified in geospatial mapping
e. Developing structuring options for the financing, operation, and ownership of new mini-grids
f. Defining legal, institutional and financing arrangements for developing mini-grids.

1.5.3 *Component 3: Technical Assistance, Capacity Building and Project Management*

This Component will support a range of activities to strengthen the capacity of the Ministry of Energy and Minerals Resources of the Government of Somaliland for overall energy sector management, power and access planning, and implementation of future development projects. These activities will include targeted technical assistance in the form of energy sector studies; development of energy sector strategies; review/finalization of energy policies; additional analytical work; improvement of respective internal ministry infrastructure and systems; capacity building through trainings, workshops, and study tours; and supporting the establishment of a Project Implementation Unit (PIU) in the ministry to oversee Component 2 and potential future IDA-funded projects.

Capacity building activities funded under this component will be preceded by a detailed needs assessment exercise in the first year of the project to identify priority interventions. This assessment will build on initial capacity building and TA needs identified during project preparation and as part of the Power Sector Master Plan currently under preparation.

These include TA to develop national engineering standards for power generation and distribution, developing a power sector regulatory framework, and training ministry staff on:

i. Preparing energy sector policy and planning;
ii. Preparing and promulgating tariff setting and licensing regulations for mini-grid operators;
iii. Establishing engineering standards such as electrical wiring and installation codes;
iv. Setting health and safety standards for workers and consumers in the electricity sector;
v. Conducting feasibility studies;
vi. Performing resource mapping and working with GIS;
vii. Environment and safeguards; and
viii. Fiduciary/Procurement.

1.6 PROJECTS EXCLUDED FROM FINANCING

There are a number of other World Bank Environmental and Social Safeguards policies and procedures in place to ensure identification and management of environment and social risks and impacts in the projects. For the purposes of this project the companies involved in the following activities will not be supported by the project.

- Production or activities involving forced labor
- Production or activities involving child labor
- Cross-border trade in waste and waste products, unless compliant to the Basel Convention and the underlying regulations.

2 SCOPE AND METHODOLOGY OF THE ESMF

2.1 ESMF JUSTIFICATION

The Environmental and Social Management Framework (ESMF) clarifies E&S management policies, processes, and mitigation principles, organizational arrangements and design criteria to be applied to subprojects, which are to be prepared during project implementation by PIU. Catalytic grant managers and private sector companies participating in the project.

PIU and the catalytic grant managers will use and refer to this ESMF during implementation of the Project. Where appropriate, Environmental and Social Management Plans (ESMPs) will be prepared during project implementation following guidelines in the ESMF. It remains the responsibility of the safeguards officers of PIU and catalytic grant managers to ensure that the necessary mitigation plans are developed and adhered to by the beneficiaries.

The specific objectives of this ESMF are:

- To ensure that the implementation of the project, for which the exact locations of the subproject sites are not definitively identified at this stage, will be carried out in an environmentally and socially sustainable manner.
- To provide information about scope of adverse E&S risks and impacts expected during subproject planning, construction and operation; describe the approach to mitigation and monitoring actions to be taken; and cost implications.
- To clarify the roles and responsibilities of PIU, catalytic grant managers and private sector companies and operators for components 1 and 2 and other stakeholders with regard to E&S due diligence, management of risks and impacts, and monitoring.
- To provide the project implementers with an E&S screening process and risk management procedures that will enable them to identify, assess and mitigate potential E&S impacts of subproject activities, including through the preparation of a site-specific Environmental and Social Impact Assessments (ESIA) and/ or Environmental and Social Management Plans (ESMP) where applicable

2.2 ESMF PRINCIPLE

This ESMF will guide the PIU in implementing the Project in line with World Bank and Government of Somaliland environmental and social management precepts.

2.3 METHODOLOGY

The ESMF was prepared through literature review and stakeholder discussions. The consultant undertook a review of the Project Appraisal Document and Integrated safeguard datasheet (ISDS) for the SEAP, as well as a review and analysis of relevant national legislation, policies, and guidelines, including the World Bank Operational and Safeguards Policies related to this Project.

Consultation with Key stakeholders in the application and implementation of the ESMF for the Project was conducted on 23 May 2018 at the MoEM. The main points outlined in the consultative meetings with key stakeholders are in chapter 5 and documentation in Annex 4.

3 POLICY, LEGISLATIVE AND INSTITUTIONAL FRAMEWORKS

3.1 SOMALI NATIONAL LAWS AND LEGISLATIONS

In all Somali territories policy and legislation with respect to the environment is evolving, in terms of assessing the potential impact of such policies on the environment, or how they could contribute to environmental conservation and sustainable livelihood improvement.
In recent years Somaliland has effected a constitution within which article 12 addresses: Public Assets, Natural Resources and Indigenous production. Although there are no Environmental Policy and Act in place, an Environmental and Social Assessment Framework has been produced through the SDF program. Protection and use of Somaliland water resources is the responsibility of the Ministry of Water Resources that has put a policy, act and regulatory framework in place.

For Somaliland, the institutions at National, Regional and District Levels responsible for the implementation and monitoring compliance of both national and international agreements are shown below and include:

- The Minister, in consultation with the Parliamentary Environment committee and civil society organizations working in the environment shall establish Environmental Watch Councils at National level (NEWC).
- The Ministry of Environment and Rural Development (MoERD) in Somaliland in consultation with Regional Authorities, the civil society at the Regional level and communities, shall establish the Regional Watch Councils (REWC).
- The MoERD in consultation with the Local Government Councils/ District Governor, local Community-Based Organizations (CBOs) and the community shall establish the District Environment and Environment Watch Council (DEWC).
- The members of the Council shall come from both genders and should be Somaliland citizens in good standing in the community and are environmentally conscientious. The council shall serve five-year terms at a time and can be re-appointed.

The environmental licensing process in Somaliland is regulated by the Ministries. The key principles are:

- a. The MOERD (Somaliland) or any person authorized by him/her may grant any of the licenses enumerated. Every license shall be subject to such conditions as may be specified therein.
- The Minister or any person authorized by him/her may at any time cancel or suspend any license granted by or on behalf of the Minister, the holder of which has been on reasonable grounds suspected by the Minister or such other authorized person, to have infringed any of the conditions upon or subject to which said license has been granted, and may at any time vary the conditions of any such license.

- Any person aggrieved by any order under this Article may appeal to the Minister of MOERD for Somaliland whose decision shall be final.

The scope of activities requiring licenses include charcoal production, mining and quarrying, collection of plants and grasses, collection of gums and resins, and investment projects including sectors such as waste, wastewater, roads, and energy infrastructure.

For the project implementation the E&S management will fully rely on WBG environmental and social standards.

Table 3.1 gives a brief overview on roles and responsibilities on environmental management.

Table 3-1 Institutional Arrangements in Environmental Decision Making

Institution	**Mandate**
Council of Ministers	Approves National Strategic Climate Strategy
Parliament	Approval of Environment Acts and Laws
Central Level MoERD (Somaliland)	• Prepares Strategic Climate, Environment and Social Strategy • Environmental Policies / Plans • Guidelines - Approves EAs • Liaison with Regional level Institutions • Monitoring and Evaluation
Regional Level: Regional Environmental Watch Councils (Somaliland)	• Implement Regional Policies • Implement Sectoral Laws (National or State Laws) - Approval of all development activities
Local Level: District Environmental Watch Council and Villages/ Pastoralist Community Environmental Watch Councils (DEWC/ PEWC)	• Implement local orders on Public Health, District natural resources • Implement Regional Laws • Approval of projects at District Level • Mobilize local communities • Submit requests for development activities to REWC

3.2 WORLD BANK SAFEGUARDS OPERATIONAL POLICIES

Relative to World Bank Environmental Safeguards, under Operational Policy (OP/BP) 4.01 the Bank undertakes environmental screening and proposed projects are classified into one of four categories, depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts:

- Category A projects are likely to have significant adverse environmental impacts that are sensitive, diverse, or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works.
- Category B projects may have potential adverse environmental impacts on human populations or environmentally important areas, but are less significant than those of Category A projects. These impacts are site specific; few if any of them are irreversible; and in most cases mitigation measures can be designed readily with standard methods.
- Category C projects are likely to have minimal or no adverse environmental impacts, and there are no further environmental requirements.
- Category FI projects involve investment of Bank funds through a financial intermediary, in subprojects that may result in adverse environmental impacts.

The Project is classified as Environmental Assessment Category B and triggers OP/BP 4.01 given that potential impacts associated with financing of small-scale activities under component 2 and 3. The project receives this classification since project activities have the potential to cause localized negative environmental impacts, which can be identified and managed using standard approaches. Projects and activities have yet to be fully defined.

Under the Project, only one World Bank safeguard policy was triggered, namely the Environmental Assessment Operational Policy (OP/BP 4.01).

Table 3-2 Status of World Bank Safeguard Policy in Regards to SEAP

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	The project is assigned as a Category B Partial Assessment, - assigned to projects that are likely to have limited and reversible environmental impacts, that can readily be mitigated. There are no significant and /or irreversible adverse environmental issues anticipated from the subprojects to be financed under the Project. The main potential environmental impacts anticipated for the project are the environmental, health and safety concerns that are likely to be associated with recycle and disposal of spent batteries at the end of their useful lives, which is

Safeguard Policies	Triggered?	Explanation (Optional)
		usually 3-5 years after deployment. Rechargeable batteries for storing solar energy may run on nickel-cadmium (Ni-Cad), nickel metal hydride (NiMH), lithium-ion (Li-ion), lead-acid (Pb-A) or lead-gel (Pb-gel). These batteries should not be disposed in standard landfills because they can create long lasting environmental and human health impacts (e.g., headaches, abdominal discomfort, seizures and comas, cancers, irritation of skin and respiratory system, burns and damage to skin and eyes, corrosion, etc.) due largely to the heavy metals such as mercury, lead, cadmium and nickel, and acids. The entire management processes including de-manufacturing, collection, storage, recycling, transport and disposal may present a challenge to this Project, given the scope of this operation. The ESMF for this grant will incorporate aspects related to solid waste from solar PV systems and/or develop a project-specific environmental code of practice (ECoP) as a guidance on approach for the collection, transport, storage and disposal of spent batteries, with the aim of ensuring that risks to the environment and human health are prevented or mitigated. Apart from providing approaches to the management of spent PV batteries, such an ECOP will also seek to inform discussion and build awareness of all stakeholders, including rural community members, vendors/suppliers of products and service providers, around safe management of used batteries. Since the specific locations/ sites of the subprojects are unknown at this stage of project preparation, the Client will prepare an Environmental and Social Management Framework (ESMF), with an ECoP within, in participatory manner and consulted upon. The ESMF will contain an environmental and social screening process, and environmental and social checklist to ensure that potential negative impacts are mitigated. Two ESMF will be development for Somaliland and Federal Government of Somalia.
Natural Habitats OP/BP 4.04	TBD	During preparation, screening will be done to establish whether there are natural habitats in the project implementation area.
Forests OP/BP 4.36	No	There are no forests in the project implementation area.

Safeguard Policies	Triggered?	Explanation (Optional)
Pest Management OP 4.09	No	There will be no chemical pesticides procured or used in this project.
Physical Cultural Resources OP/BP 4.11	No	The project will not result in land disturbance.
Indigenous Peoples OP/BP 4.10	No	This policy is not applicable because there are no indigenous peoples in Somalia.
Involuntary Resettlement OP/BP 4.12	No	No physical displacement is anticipated due to the nature of the project. There will be no land acquisition under Component 1 and 2.
Safety of Dams OP/BP 4.37	No	There will be no dam construction financed in this project.
Projects on International Waterways OP/BP 7.50	No	Project sites are not located on or near any international waterways.
Projects in Disputed Areas OP/BP 7.60	No	The project will not be operating in disputed areas.

In accordance with OP/BP4.01, This ESMF sets out the principles, rules, guidelines and procedures to assess the environmental and social impacts. It contains measures and plans to reduce, mitigate and/or offset adverse impacts and enhance positive impacts, provisions for estimating and budgeting the costs of such measures, and information on the agency or agencies responsible for addressing project impacts.

No social impacts related to IPs or involuntary resettlements are anticipated under any of the activities proposed for implementation under the three components of the project. This is because the activities will be implemented within the premises of existing firms. For this reason, the project has not triggered the Social Safeguard Policies, OP/BP 4.10 (Indigenous Peoples) and OP/BP 4.12 (Involuntary resettlement).

3.3 WORLD BANK GROUP EHS GUIDELINES

WBG has guidelines for Environment, Health and Safety (EHS) that serve as useful references for general issues as well as sector-specific activities. Projects financed by the World Bank Group are expected to comply with this guideline as required by the policies and the standards. The EHS guidelines are mainly on occupational health and safety, community health and safety as well as on construction and decommissioning. It contains guidelines cross cutting on environmental (waste management, ambient air quality, noise and water pollution), occupational health and safety issues among others, applicable to all the industry sectors.

4 PROJECT BIOPHYSICAL AND SOCIOECONOMIC SETTING

4.1 CLIMATE

The Somali climate is hot, arid to semi-arid. There are two wet seasons (Gu April to June, and Deyr October to November) with approximately 500 mm rainfall annually in the northern highlands, 50-150mm along coast, and 300-500 mm in the southwest. With the impact of climate change extreme weather patterns such as droughts and floods (see also natural disasters) are likely to increase in frequency and magnitude.

4.2 ENERGY RESOURCE

Somaliland is rich in energy resources, having unexploited reserves of oil and natural gas, untapped hydropower, extensive geothermal energy resources, many promising wind sites, and abundant sunshine, which can produce solar power. The major obstacles to development of these potentially available energy resources are political, financial and institutional. Traditional biomass fuels such as firewood and charcoal, primarily used in rural and poor communities, account for over 80% of the country's total energy consumption.

4.3 SOLAR ENERGY

Solar energy is abundant in Somaliland and is an increasingly popular option for rural communities, individual businesses, and facilities. Horizontal solar energy is at least 200 W/m2 over most of the Somali region, equalling roughly 200 kW/ km^2. The Somali region gets on average 2,900 to 3,100 hours of sunlight per year. It has one of the highest daily averages of total solar radiation in the world. The yearly average solar radiation for Hargeisa is 6.4 kWh/m2 /day and the average yearly temperature in the country is 27°C, a reasonable temperature to permit a satisfactory operation life of solar PV systems[3].

4.4 ENERGY ACCESS

The electricity access rate is estimated at 15 percent. Access depends significantly on demographic variables, with urban access estimated at 33 percent, and rural access at 4 percent. With an average household size of 5.9, this translates to approximately 1.7 million un-electrified households nationwide. Private sector players supply more than 90 percent of power in urban and peri-urban areas using local private mini-grids, having invested in diesel-based systems of between 500 kVA to 5000 kVA installed capacity per mini-grid. These mini-grids are usually zoned, with each operator building, owning, and operating the generation, transmission, distribution and maintenance, as well as collecting tariffs. Thus, more than 68 percent of

[3] Based on data from the European Commission's African Renewable Energy Technology Platform (AFRETEP), http://capacity4dev.ec.europa.eu/afretep/minisite/maps-and-data-sources. Calculations based on an average six-hour day of electrification in a 365-day year

urban/peri urban households receive electricity service, though at a high cost that might reach a maximum of $1/kWh, making Somali region one of the costliest places in the world to buy power. The latest ESMAP Regulatory Indicators for Sustainable Energy (RISE) report found that Somali region ranks in the upper 5% globally for power cost, and in the upper 15% globally for power expenditure as a share of GNI per household. As a result, access levels remain low despite many households living near mini-grid power lines.

5 CONSULTATION AND PUBLIC DISCLOSURE

The World Bank Safeguards Operational Policy /Bank Procedures (OP/BP 4.01 on Environmental Assessment requires public consultation with relevant stakeholders (potential project beneficiaries, affected groups and local non-governmental organizations (NGOs) about the project environmental/social impacts and take their view into account. Below is the process followed in stakeholder engagement and disclosure plans.

Stakeholder engagement is important because it will give the project stakeholders and the potentially Project Affected Person(s) the opportunity to contribute input and feedback information, aimed at strengthening the development process and avoiding negative impacts or mitigating them where they cannot be avoided. Effective and close consultation with them is a pre-requisite for the successful running and execution of the SEAP.

The PMU will establish a grievance redress mechanisms (GRM) that will allow general public in the project area, affected communities or individuals to file complaints and to receive responses in a timely manner. The system will also record and consolidate complaints and their follow-up. This system will, be designed for handling complaints perceived to be generated by the project or its personnel. It may also include disagreements about compensation and other related matters.

Stakeholder's engagement and public consultation would be an on-going activity taking place throughout the entire project process. Public participation and consultation would take place through meetings, radio programs, requests for written proposals/comments, filling in of questionnaires, explanations of project to the locals, making public documents available at the national and local levels.

During the project preparation process, discussions were held with project implementing agency (MoEM) on the project activities and components.

Minutes of the stakeholders consultations are documented in Annex 4

Consultations with stakeholders will be held continuously with the beneficiaries throughout the course of project implementation.

5.1 ESMF DISCLOSURE

The ESMF will be disclosed on MoEM website and the World Bank's Info Shop.

6 KEY RISK AND IMPACT MITIGATION

6.1 INTRODUCTION

Key E&S risks identified as cross-cutting for the project include, labor / OHS risks. The project's investments will be considered in the environmental and social assessments. Specific E&S risks for each project component are mainly linked to processes and capacity of key stakeholders for E&S risk management.

Table 6-1 Key E&S Challenges and Mitigation

Challenges	Approach to mitigation
Decentralized project design with a large number of small subprojects prepared by private sector implementing entities	• Environmental and Social Management Systems (ESMS) requirements for SHS companies; differentiate ESIA and ESMP requirements based on E&S risk categorization; detailed and step by step E&S responsibilities for key players for each project component
Lack of awareness on E&S risks and impacts (communities, SHS customers)	• Sensitization and dialogue via various methods of stakeholder engagement • An ECOP (Annex 7) has been developed specifically for all equipment to be financed under the project, namely solar PV systems of generally in the range of 5 Watts. The key environmental issue associated with the project is the appropriate management and disposal/recycling of used Ni-Cad and Lead Acid Batteries. • The ECOP also covers health and safety during installation and the, avoidance of land conflicts by requiring land owner approvals for any use of third party land
Lack of capacity among private sector implementing entities	• Training for SHS companies
Battery disposal and recycling	• Development of a strategic approach to SHS companies in putting in place coherent battery storage, recycling, and disposal practices (See Annex 2)

Challenges	Approach to mitigation
The core issue with the SHS component is the potential long-term implications of the increased number of the energy storage units (containing batteries) that need to be recycled.	• Labor and OHS practices of SHS companies would need to be compliance with the World Bank EHS guidelines and good practice.

The potential negative E&S impacts associated with the sub projects are summarized in Table 6.2 below. Beyond the mitigation measures discussed below it will be important to adopt waste management principles (Source reduction, reuse and recycling) at all time

Table 6-2 Potential E&S risks and impacts

Environmental Receptor/ Medium	Comment	Impact Indicators	Project components impacts are relevant for	Impact
Battery disposal	End of life battery disposal remains the major risk	OHS impacts on workers handing battery recycling, uncertified facilities, inadequate waste disposal practices	1	High
Demography	Demography of community in the Project's AoI	Changes in demography, gender ratio, age distribution, socio-economic structure, etc. of the local community	1	Low

Environmental Receptor/ Medium	Comment	Impact Indicators	Project components impacts are relevant for	Impact
Utilities	The existing utilities (e.g. power supply.) in the Project's AoI	Changes in existing utilities	1	Moderate
Infrastructure	The existing infrastructure such as road, waste handling facilities, etc. within the Project's AoI	Potential damage to road infrastructure; road traffic and accidents; increased pressure on waste management facilities	1	Moderate
Employment/income	The employment situation in the Project's AoI	Opportunities for local employment; changes in income level	1,2, and 3	Moderate

Environmental Receptor/ Medium	Comment	Impact Indicators	Project components impacts are relevant for	Impact
General public/ project communities	Labor influx and GBV	Increase in the demand for basic services due to temporary influx of workers. Increased crime (including prostitution, theft and substance abuse) to increase in proposed sub project areas as influx of people increases Increased risk of communicable diseases (including STI/ HIV/AIDs)	1,2 and 3	low
Construction workers	Health and safety of SHS company employees.	Accident, injury, fatality, exposure to nuisance (dust, noise), fire, etc.	1	Moderate
Workplace health and safety	Health and safety of employees involved in SHS installation.	Accident, injury, fire, explosion, etc.	1	Moderate
General public / communities	Health and safety of the general public	Accident, fire, explosion	1	Moderate

6.2 POSITIVE E&S IMPACTS

- **Reduced lighting costs to project beneficiaries**: Electricity access will replace kerosene lamps which are expensive to operate. Kerosene is costly both for low income households that buy it, and for governments that subsidize it. In parts of Africa, for instance, kerosene

costs make up 10-25% of household monthly budgets according to a report by Lighting Africa market trends report 2013. Comparing to these costs, the consumption electricity bills seem to be cheaper than using kerosene for lighting significantly. Therefore, this project means greater savings on the part of the households.

- **Positive expected impact on poverty alleviation**: With more affordable and stable electricity in the otherwise off-grid areas, the beneficiaries will be engaging in income generating activities hence improving their economic status.

- **Provision of employment:** Although minimal this project will have a positive impact on both direct and indirect employment levels in the country translating into incomes at the household levels which will trigger other spending and demand in the local economy.

- **Improved standard of living:** The implementation of this project will result in connecting about 28,700 to the off grid electricity. Access to electricity will change the standard of living of the people as they can use domestic appliances like, fridges, television sets, to mention but a few. Use of electricity for lighting implies that the people will not be exposed to smoke arising from use of kerosene lamps which predisposes people to respiratory diseases.

- **Communications:** Access to electricity will lead to improved communication for the beneficiaries. This will be enabled by the fact that charging of mobile phones will be easier and cheaper. Access also to mass media like radio and T.V will provide opportunity for the households to access a wide range of information which is useful for decision making.

- **Gender Considerations:** Electricity is a basic service especially for lighting but is still a luxury for many rural women and men. Access to modern electricity will go a long way towards alleviating the daily household burdens of women, giving them more time, improving their health and enhancing their livelihoods. Available literature on gender and energy suggests that providing electricity to communities and homes will promote gender equality, women's empowerment, and women's and girls' access to education, health care, and employment. Indeed, most gender benefits of the project will occur because women tend to spend more time at home, are responsible for household chores that can be carried out more productively with electricity, and because certain tasks are culturally defined as women's work. The first and strongest impacts of the project shall occur via lighting and TV.

  Electricity will definitely displace more expensive candles and kerosene lamps, thereby reducing indoor air pollution, fire, burn risk and providing higher quality light. Women and girls will benefit more from air pollution of kerosene lamps because they spend more time in the kitchen. Lighting and television will improve access to information, the ability

to study, and extend the effective working day. This is more so because children can have extended time of study. The women will also benefit more due to access of information, especially on health and nutrition since they also spend more time at home. The project will also enhance security in the rural areas as most homes will be lit up, a benefit that is more appreciated by women.

7 ROLES AND RESPONSIBLITIES OF IMPLEMENTING ENTITIES

The successful implementation of the ESMF depends on the commitment of the Catalytic Catalytic grant manager(CFM), the private sector and related institutions, and the capacity within the institutions to apply or use the ESMF effectively, and the appropriate and functional institutional arrangements, among others.
Below describes the detailed roles and responsibilities of the key institutions involved in the implementation of the ESMF by project components.

7.1 PROJECT IMPLEMENTATION ARRANGEMENTS

Project Implementation Units (PIUs) will be established within the Department of Energy at the Ministry of Energy in Hargeisa. They will have the overall responsibility for project management, coordinating project implementation, monitoring and evaluation, and reporting of results to stakeholders and developing environment and social safeguards frameworks and plans. PIU staff for the project will either be seconded from government or hired as consultants, through a competitive process. Short-term local and international consultants will be recruited to support the PIU as needed. The capacity in the PIUs will be enhanced through on-the-job training and mentoring by the Bank's technical staff working on fiduciary and safeguards and the task team leader. .

PIU will be provide overall responsibility for safeguards due diligence, and compliance monitoring. Further, PIU will be responsible for the overall coordination of the project implementation and oversight. Specifically, in terms of E&S risk management across project components, the catalytic grant managerfor the project will be responsible for:

- Overall oversight of the E&S risk assessment, management, and monitoring processes in line with this ESMF, for each component of the Project;
- Putting in place and implementing a reporting system from private sector entities to PIU on implementation of E&S requirements;
- Engaging an independent E&S auditor to ensure that private sector entities are implementing E&S requirements set out in the ESMF consistently;
- Assuming responsibility for citizen engagement, maintaining adequate stakeholder engagement and grievance redress mechanism and ensuring that private sector entities maintain the same at their level. The catalytic grant managerfacilitate liaise with CBOs, NGOs and project affected communities;
- Designing, organizing and implementing capacity building programs SHS distributors;
- Defining, jointly with the respective states and local governments, the project priorities based on technical and policy development priorities;

- Resolving in consultation with the national and local governments challenges requiring high level intervention facing the project; and
- Monitoring the implementation of the project in consultation with the national and local governments.

The select catalytic grant managerwill have safeguard capacity within its team to review beneficiary, applications, review and monitor the grants, and work in close collaboration with the PIU safeguard focal person to manage the execution of the ESMF;

7.2 E&S MANAGEMENT PROCESS FOR COMPONENT 1

The goal of this component is to reduce market barriers for the private sector to provide modern energy access through solar home systems to some of the households and small households in Somaliland without electricity. The activity targets (i) poorer households and small businesses in areas that cannot afford to connect to mini-grid services (ii) households and businesses in these areas that are not sufficiently close to a mini-grid to be economically connected; (iii) isolated villages and smaller settlements where mini-grids do not make economic sense; and (iv) nomadic pastoralists whose livelihoods do not lend themselves to a fixed electricity connection. This component will support the deployment of stand-alone solar systems ranging in different sizes and levels of service. SHS standards are described in the SHS Operations Manual in detail.

Based on the qualification criterial established by catalytic grant managerand the World Bank, which include E&S requirements, SHS distributors will need to be qualified before they can submit application for grants under this component. Once a SHS distributor becomes a qualified distributor, it can then submit grant application, which once approved, will cover aspects of increase enterprise liquidity by investments into business functions such as marketing, training, and after-sales support. Once the grant agreement has been signed, the distributor will start the installation/distribution. This Expansion Grant is also intended to further scale early pilots for providing consumer financing plans (including pay-as-you-go) that enable customers to pay in installments, thus spreading out payment over longer periods of time and improving affordability. The grant could also be accessible to MFIs and local savings cooperatives seeking to grow their solar consumer loan portfolios. The distributor will be required to maintain good compliance and good customer service after installation. Catalytic grant manageris responsible for verifying distributors 'qualification, installation performance, overall compliance and maintaining a GRM for both the public and the distributors for project related feedback.

In sum, the process has three main stages: (1) Distributor Qualification Process; (2) SHS Installation Stage; and (3) Post Installation Stage.

7.3 SHS DISTRIBUTORS QUALIFICATION PROCESS

The Catalytic Grant manager will establish and publish the qualification criteria for SHS distributors to apply to become ―Qualified Distributor under this project component. Specific E&S requirements are:

- Have a good E&S track record, meaning no E&S related fines, violation record, litigation, or pending litigations in the past three years;
- Have an institutional ESMS that meets CGM requirements – ESMS here is defined as a number of key policies and procedures prepared and implemented by an SHS company (see Annex 2);
- Have the intuitional capacity to implement such ESMS; and
- Be willing to participate in E&S capacity building activities hosted by catalytic grant manager should CGM deems necessary.

Interested distributors can submit its completed Qualification Application Form and supply all required documentation for application, including E&S documents, as part of application.
Catalytic grant manager will review and verify the application before making the decision.

- Verify the adequacy of information submitted; and
- Maintain and address project related GRM issues

After verification, CGM and the SHS distributer would sign the Grant Agreement, which should include clear E&S requirements, such as

- Distributor's responsibility to maintain required policies in good standing; and
- Distributor will notify Catalytic grant manager of any E&S issues affecting its compliance.

7.3.1 SHS Distributor Operation

With the signed agreement, distributor will start install SHS per its terms as long as its operation remains in good compliance with laws and all other E&S requirements.
Catalytic grant manager will pay for qualified claims and maintain any project related GRM issues.

7.3.2 Post-Installation

After the SHS has been installed and is in use, the distributor is still responsible to maintain in good compliance to overall requirements, provide good customer service, and participate in battery disposal/recycle program.

Catalytic Grant manager's duty to monitor operation and verify compliance include:

- Monitoring E&S compliance by independent company (under TOR for general monitoring of SHS companies);
- Maintain project related GRM issues; and
- Prepare strategy for battery disposal / recycling (Lithium ion).

7.4 E&S AREAS FOR COMPONENT 2

This component will focus on analytical work that will support activities to establish a pipeline of mini-grid projects that can be supported with future financing from the World Bank or other development partners. Analytic work under this project is expected to include the following activities:

- Geospatial mapping to undertake a more comprehensive inventorying of the current mini-grid situation in Somaliland, identify potential future sites, and estimate future demand
- Review of property rights and land issues pertaining to energy infrastructure investment
- Pre-feasibility studies for hybridization, operational enhancements, and densification of Brownfield (existing) mini-grid sites
- Pre-feasibility studies for Greenfield (new) sites identified in geospatial mapping
- Developing structuring options for the financing, operation, and ownership of new mini-grids
- Defining institutional and financing arrangements for sustainability

The consultant to be engaged for the prefeasibility must have a safeguard capacity within its team. The role of the safeguard consultant which should come out clearly in the TOR is among others to detail an E&S scope that will mainstream the following areas into the feasibility report;

- E&S risks
- Potential mini grid placing or siting
- Land acquisition
- Access
- Site selection process
- E&S Issues to be taken up during the subsequent phases

7.5 ROLE OF THE WORLD BANK

World Bank will lay the benchmarks for all environmental and social safeguard issues concerned with the development and implementation of the CFM projects. It will provide overall supervision, facilitation and co-ordination of the CFM. It will also monitor funds and funds allocations; and project performance indicators. The World Bank will assess the implementation

of the ESMF and recommend additional measures for strengthening the management framework and implementation performance, where need be. The reporting framework, screening procedures and preparation of management and mitigation plans shall be discussed and agreed by the Bank team and PIU during the early part of project implementation.

8 SUB PROJECT SCREENING

8.1.1 Step 1. Applicability

Project activities include works, as well as the purchase of goods and services. All works contracts that will be supply and install, and all infrastructure goods, such as solar panels, will be installed by contractors that are funded by the Project under a works' contract.

The first step of screening is for the catalytic Grant manager to determine the extent of potential direct and indirect environmental and social impacts for each subproject. No further attention is required if the subproject is unlikely to have direct or indirect environmental or social impacts.

8.1.2 Step 2. Eligibility (Negative List)

The second step is to determine if the subproject is eligible for financing under the Project. The catalytic grant manager will identify, analyze and assess if the subproject is likely to have any of the following attributes:

Category A attributes, such as:

Activities with significant adverse impacts that are sensitive, diverse, or unprecedented, or that affect an area broader than the sites or facilities subject to physical works

Major resettlement

Greenfield subprojects

Solid Waste

New disposal site

Irrigation

Construction of new or the expansion of existing irrigation and drainage schemes.

Income Generating Activities

Activities involving the use of fuelwood, including trees and bush

Activities involving the production or use of hazardous substances or explosives

Labor

Activities with potentially significant adverse impacts related to labor influx, child or forced labor

Natural Habitats, World Bank OP 4.04

Activities with impacts to natural habitat should be excluded, particularly impacts to critical natural habitats, sensitive areas, high biodiversity values, and protected areas.

Pesticides, World Bank OP 4.09

Activities requiring pesticides that fall in WHO classes IA, IB, or II.

Physical Cultural Resources, World Bank OP 4.11
Damage to cultural property, including but not limited to activities that affect:
Archaeological and historical sites
Religious monuments, structures, and cemeteries

Involuntary Resettlement, World Bank OP 4.12
Activities requiring the involuntary taking of private land and relocation of PAPs
Activities that require the relocation of encroachers or squatters

Forests, World Bank, World Bank OP 4.36
Activities that would involve significant conversion or degradation of critical forest areas or related critical natural habitats

Safety of Dams, World Bank OP 4.37
The rehabilitation of any dams, or any activities that may be affected by the operation of an existing dam

Projects on International Waterways, World Bank OP 7.50
Activities that affect non-national riparians

Subprojects with any of the above attributes will not be eligible for support under the Project.

8.1.3 Possible Environmental and Social Impacts

The catalytic grant manager will screen every subproject for environmental and social impacts using the following checklist:

- **Zoning and Land Use Planning**
  - Will the subproject affect land use zoning and planning or conflict with prevalent land use patterns?
  - Will the subproject involve significant land disturbance or site clearance?
  - Will the subproject land be subject to potential encroachment by urban or industrial use or located in an area intended for urban or industrial development?

- **Utilities and Facilities**
  - Will the subproject require the setting up of ancillary production facilities?
  - Will the subproject require significant levels of accommodation or service amenities to support the workforce during construction (e.g., contractor will need more than 20 workers)?

- **Water and Soil Contamination**
  - Will the subproject require large amounts of raw materials or construction materials?

- Will the subproject generate large amounts of residual wastes, construction material waste or cause soil erosion?
- Will the subproject result in potential soil or water contamination (e.g., from oil, grease and fuel from equipment yards)?
- Will the subproject lead to contamination of ground and surface waters by herbicides for vegetation control and chemicals (e.g., calcium chloride) for dust control?
- Will the subproject lead to an increase in suspended sediments in streams affected by road cut erosion, decline in water quality and increased sedimentation downstream?
- Will the subproject involve the use of chemicals or solvents?
- Will the subproject lead to the destruction of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards?
- Will the subproject lead to the creation of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors?

- **Noise and Air Pollution Hazardous Substances**

  - Will the subproject increase the levels of harmful air emissions?
  - Will the subproject increase ambient noise levels?
  - Will the subproject involve the storage, handling or transport of hazardous substances?

- **Destruction/Disruption of Land and Vegetation**

  - Will the subproject lead to unplanned use of the infrastructure being developed?
  - Will the subproject lead to long-term or semi-permanent destruction of soils in cleared areas not suited for agriculture?
  - Will the subproject lead to the interruption of subsoil and overland drainage patterns (in areas of cuts and fills)?
  - Will the subproject lead to landslides, slumps, slips and other mass movements in road cuts?
  - Will the subproject lead to erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains?
  - Will the subproject lead to long-term or semi-permanent destruction of soils in cleared areas not suited for agriculture?
  - Will the subproject lead to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles?

- **Expropriation and Social Disturbance**
  - Will the subproject impact internally displaced persons (IDP) negatively?

- Will the subproject lead to induced settlements by workers and others causing social and economic disruption?
- Will the subproject lead to environmental and social disturbance by construction camps?
- Will the subproject cause economic displacement?
- Will the subproject temporarily displace squatters, economically or physically, or other informal groups?
- Will the subproject cause a loss in productive assets or income source?
- Will the subproject restrict access to resources?
- Will the subproject affect the livelihoods or vulnerable people, such as persons with disabilities, widows or the elderly?
- Will the subproject create social conflict over the distribution of benefits or resources?

The catalytic grant manager or the focal points in the implementing partners might need to conduct field visits to determine if any of the above impacts might be triggered. Any subproject triggering any of the above impacts will require an Assessment of the triggered impacts, and a Plan to mitigate the specific impacts.

8.2 Screening form

Within one week of receiving a draft subproject proposal, the catalytic grant manager will prepare and sign a screening form (Template in Annex 1.) indicating if the ESMF is applicable to the subproject and if the subproject triggers any of the attributes in the negative list.

The signed screening form will be passed on by the catalytic grant manager to the Program Manager and the relevant subproject engineer for further processing.

9 GRIEVANCE REDRESS MECHANISM

The project will set up a project-specific Grievance Redress and Feedback Mechanism for people to report concerns or complaints, if they feel unfairly treated or are affected by any of the subprojects. The mechanism will amongst other things:

- Provide information about project implementation;
- Provide a forum for resolving grievances and disputes at the lowest level;
- Resolve disputes relatively quickly before they escalate to an unmanageable level;
- Facilitate effective communication between the project and affected persons;
- Win the trust and confidence of project beneficiaries and stakeholders and create productive relationships between the parties.

The mechanism is envisaged to operate at multiple levels and will address such complaints, including logging, tracking, and resolving grievances promptly during and after the implementation of the Project.

The PIU is responsible for setting up and maintaining the GRM that allows general public in the project area and affected communities or individuals to file complaints and to receive responses in a timely manner. The system will also record and consolidate complaints and their follow-up. This system will be designed for handling complaints perceived to be generated by the project or its personnel. It may also include disagreements about compensation and other related matters.

The GRM will be communicated to all stakeholders in the course of its community engagement activities, and will make public available a record documenting the responses to all grievances received. The GRM will remain available throughout the project cycle. It is expected to address concerns promptly an effectively, in a transparent manner that is culturally appropriate and readily accessible to all project affected parties, at no cost and without retribution. It also allows for anonymous complains to be raise and addressed.

The PIU will assign a specific staff member to oversee that this is functioning properly. The consultants should review any existing GRM systems (government/traditional) that are operative in the area and propose ways that the GRM may fit within these systems. Ideally, the GRM should have second and third levels of appeal (including the court system, if appropriate, for legitimate claims that cannot be resolved at lower levels). The functioning of the GRM system, how to register complaints (written, by phone, or in person), where to go consultations on the project. For the purpose of clear procedure below table present a typical grievance redress process and modality.

The GRM should include the following elements. More details see Table 9-1 Grievance Management Process.

- Different ways in which users can submit their grievances, which may include submission in person, by phone, text message, mail, email or via a website;
- A lot where grievances are registered in writing and maintained as a database;
- Publicly advertised procedures, setting out the length of time users can expect to wait for acknowledgement, response, and resolution of their grievances;
- Transparency about the grievance procedure, governing structure and decision makers; and
- An appeals process (including the national judiciary) to which unsatisfied grievances may be referred when resolution of grievance has not been achieved

Table 9-1 Grievance Management Process

Process	**Description**	**Time Frame**	**Other Information**
Identification of grievance	Face to face; phone; letter; mail; e-mail; website; recorded during public/ community interaction; others The responsible party to receive the grievances will be CFM and the subproject implementers The grievance can also be passed through other parties, such as the chief office because the public are more conversant with this office. The grievance receiver would then pass the complaint to CFM contact person	1 Day	Email address; hotline number

Process	Description	Time Frame	Other Information
Grievance assessed and logged	Significance assessed and grievance recorded or logged (i.e., in a log book) It will be prudent to have a grievance record book where the grievances are recorded for follow up	3-6 Days	Significance criteria: • Level 1 –one off event; • Level 2 – complaint is widespread or repeated; • Level 3- any complaint (one off or repeated) that indicates breach of law/ policy or this ESMF provisions
Grievance is acknowledged	Acknowledgement of grievance through appropriate medium	3 Days	
Development of response	Grievance assigned to appropriate party for resolution Response development with input from management/ relevant stakeholders	4-8 Days	
Response signed off	Redress action approved at appropriate	8-15 Days	
Implementation /communication of response	Redress action implemented and update of progress on resolution communicated to complainant	5-9 Days	

If complainants are not satisfied with the grievance process, even after arbitration, the affected persons will still have the right to present their complaint through the court system. A draft template for registering grievances is found in Annex 6.

9.1 GRIEVANCE MECHANISM FOR WORKERS

SHS as part of their ESMS will put in place a Grievance Mechanism for their workers that is proportionate to their workforce, according to the following principles:

Provision of information. All workers should be informed about the grievance mechanism at the time they are hired, and details about how it operates should be easily available, for example, included in worker documentation or on notice boards.

Transparency of the process. Workers must know to whom they can turn in the event of a grievance and the support and sources of advice that are available to them. All line and senior managers must be familiar with their organization's grievance procedure.

Keeping it up to date. The process should be regularly reviewed and kept up to date, for example, by referencing any new statutory guidelines, changes in contracts or representation.

Confidentiality. The process should ensure that a complaint is dealt with confidentially. While procedures may specify that complaints should first be made to the workers' line manager, there should also be the option of raising a grievance first with an alternative manager, for example, a human resource (personnel) manager.

Non-retribution. Procedures should guarantee that any worker raising a complaint will not be subject to any reprisal.

Reasonable timescales. Procedures should allow for time to investigate grievances fully, but should aim for swift resolutions. The longer a grievance is allowed to continue, the harder it can be for both sides to get back to normal afterwards. Time limits should be set for each stage of the process, for example, a maximum time between a grievance being raised and the setting up of a meeting to investigate it.

Right of appeal. A worker should have the right to appeal to PIU or national courts if he or she is not happy with the initial finding.

Right to be accompanied. In any meetings or hearings, the worker should have the right to be accompanied by a colleague, friend or union representative.

Keeping records. Written records should be kept at all stages. The initial complaint should be in writing if possible, along with the response, notes of any meetings and the findings and the reasons for the findings.

Relationship with collective agreements. Grievance procedures should be consistent with any collective agreements.

Relationship with regulation. Grievance processes should be compliant with the national employment code.

10 ESMF CAPACITY BUILDING AND TRAINING

The counterpart's capacity in planning, implementing and supervising any due diligence measures (environmental, social, technical and overall quality) is currently deemed very low. There is very limited capacity in terms of staffing, financial resources and skills on the World Bank's safeguard policies. In Somaliland, capacity within the Ministry of Energy and Mineral Resources, which is responsible for energy sector policy and oversight, and Ministry of Public Works, which supervises the Somaliland Electricity Agency (SEA) have limited capacity to provide sector management, including in safeguards.

Despite the current low level of safeguard capacity within the agencies responsible for the power sector in Somaliland, there is some nascent capacity in those government's agencies responsible for environmental matters. Given the relatively low to minimal level of environmental and social impacts anticipated by small-scale solar installations under this project, the addition of one or two knowledgeable and engaged safeguard specialists to a dedicated PIU or the staff of agencies responsible for electricity sector oversight could adequately cover safeguard requirements for this project. Under Component 3, additional capacity building for safeguard focal points and implementing agencies' technical staff could also serve as the base for strengthening their safeguards oversight capacity for possible future larger power projects. The frameworks will assess in more detail the staffing and capacity of the implementing agencies and propose a course of action to fill the staffing and capacity gaps during implementation.

The ESMF has assessed the implementing agencies capacity and has proposed measures to enhance safeguards capacity to improve environmental and social performance during project implementation; this will include safeguards training for MOEM.

The budget will cater for Capacity building of the PIU related to safeguard compliance, strengthening E&S capacity, community engagement and sensitization, gender action implementation, battery recycling and Implementation of ESMF.

The budget remains open for revision and improvement as and when needed.

Table 10-1 Estimated budget for technical assistance & implementation of ESMF

Activity	**Estimated Budget (USD)**
Strengthening PIU Safeguard capacity	20,000
Battery recycling, Waste management, and more specifically, battery storage and recycling; and need for harmonization of E&S standards among SHS distributors	20,000

Activity	Estimated Budget (USD)
Community engagement and sensitization campaigns	30,000
Gender actions implementation. Implementing gender strategy for the project by taking action for women to be seen and engaged as valuable partners along the entire value chain—in the design, marketing, sales, and after-sale services	40,000

11 ANNEXES

ANNEX 1: SUBPROJECT SCREENING

TEMPLATE FOR SUBPROJECT SCREENING

Subproject name	
Subproject location	
Implementing Partner	
Is OP 4.01 applicable?	
Is the subproject eligible (yes/no)?	
Field Visit (yes/no; include date)	
Observations/comments	
Signature of catalytic grant manager	

Applicability

Is the subproject likely to have direct or indirect environmental or social impacts?

Yes Continue to Step 2

No Go to bottom of page and sign the screening form

Eligibility (Negative List)

The subproject is ineligible if it has any of the following attributes. If this is the case, complete the form and sign it.

	Yes	No
Category A attributes, such as:		
Activities with significant adverse impacts that are sensitive, diverse, or unprecedented, or that affect an area broader than the sites or facilities subject to physical works		
Major resettlement		
Greenfield projects		
Solid Waste		
New disposal site		
Irrigation		
Construction of new or the expansion of existing irrigation and drainage schemes.		
Income Generating Activities		

Activities involving the use of fuelwood, including trees and bush.		
Activities involving the production or use of hazardous substances or explosives		

Labor		
Activities a high risk of significant adverse impacts related to labor influx, child or forced labor.		
Natural Habitats, World Bank OP 4.04		
Activities a high risk of significant adverse impacts related to labor influx, child or forced labor		
Pesticides, World Bank OP 4.09		
Activities requiring pesticides that fall in WHO classes IA, IB, or II.		
Physical Cultural Resources, World Bank OP 4.11 Damage to cultural property, including but not limited to activities that affect:		
Archaeological and historical sites		
Religious monuments, structures, and cemeteries		
Involuntary Resettlement, World Bank OP 4.12		
Activities requiring the involuntary taking of private land and relocation of PAPs		
Activities that require the relocation of encroachers or squatters		
Forests, World Bank OP 4.36		
Activities that would involve significant conversion or degradation of critical forest areas or related critical natural habitats		
Safety of Dams, World Bank OP 4.37		
The rehabilitation of any dams, or any activities that may be affected by the operation of an existing dam Construction of dams more than 5 meters high		
Projects on International Waterways, Bank OP 7.50		
Activities that affect non-national riparians		

Environmental or social impacts

Is the subproject likely to cause any of the following environmental or social impacts?

	YES	NO
A. Zoning and Land Use Planning		
1. Will the subproject affect land use zoning and planning or conflict with prevalent land use patterns?		
Will the subproject involve significant land disturbance or site clearance?		
Will the subproject land be subject to potential encroachment by urban or industrial use or located in an area intended for urban or industrial development?		
B. Utilities and Facilities		
2. Will the subproject require the setting up of ancillary production		

facilities?		
3. Will the subproject require significant levels of accommodation or service amenities to support the workforce during construction (e.g., contractor will need more than 20 workers)?		
C Water and Soil Contamination		
4. Will the subproject require large amounts of raw materials or construction materials?		
5. Will the subproject generate large amounts of residual wastes, construction material waste or cause soil erosion?		
6. Will the subproject result in potential soil or water contamination (e.g., from oil, grease and fuel from equipment yards)?		
7. Will the subproject lead to contamination of ground and surface waters by herbicides for vegetation control and chemicals (e.g., calcium chloride) for dust control?		
8. Will the subproject lead to an increase in suspended sediments in streams affected by road cut erosion, decline in water quality and increased sedimentation downstream?		
9. Will the subproject involve the use of chemicals or solvents?		
10. Will the subproject lead to the destruction of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards?		
11. Will the subproject lead to the creation of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors?		
D. Noise and Air Pollution Hazardous Substances		
12. Will the subproject increase the levels of harmful air emissions?		
13. Will the subproject increase ambient noise levels?		
14. Will the subproject involve the storage, handling or transport of hazardous substances?		
E. Destruction/Disruption of Land and Vegetation		
15. Will the subproject lead to unplanned use of the infrastructure being developed?		
16. Will the subproject lead to long-term or semi-permanent destruction of soils in cleared areas not suited for agriculture?		
17. Will the subproject lead to the interruption of subsoil and overland drainage patterns (in areas of cuts and fills)?		
18. Will the subproject lead to landslides, slumps, slips and other mass movements in road cuts?		
19. Will the subproject lead to erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains?		
20. Will the subproject lead to long-term or semi-permanent destruction of soils in cleared areas not suited for agriculture?		
21. Will the subproject lead to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles?		
F. Expropriation and Social Disturbance		
22. Will the subproject impact internally displaced persons (IDP) negatively?		
23. Will the subproject lead to induced settlements by workers and others causing social and economic disruption?		
24. Will the subproject lead to environmental and social disturbance by construction camps?		

25. Will the subproject cause economic displacement?		
26. Will the subproject temporarily displace squatters, economically or physically, or other informal groups?		
27. Will the subproject cause a loss in productive assets or income source?		
28. Will the subproject restrict access to resources?		
29. Will the subproject affect the livelihoods or vulnerable people, such as persons with disabilities, widows or the elderly?		
30. Will the subproject create social conflict over the distribution of benefits or resources?		

ANNEX 2: SHS DISTRIBUTOR ENVIRONMENTAL AND SOCIAL MANAGEMENT SYSTEM: BASIC REQUIREMENTS

This document provides basic requirements for the institution's Environmental and Social Management System (ESMS) for SHS distributors who are interested in being qualified for the SEAP Component 1. There are three basic requirements for the institutional management of E&S issues, which also requires the SHS Company to commit sufficient resources and capacity to implementation.

Human Resources Policy

SHS company will have in place an HR policy that expresses its commitments, at a minimum to: (1) comply with all relevant national labor laws and regulations; (2) promote the fair treatment, non-discrimination, and equal opportunity for workers; (3) establish, maintain, and improve the worker-management relationship; (4) allow workers' organizations and collective bargaining; (5) have in place a grievance mechanism for workers; (6) not to employ forced labor or child labor, including not hiring workers below minimum age, as defined by national law and not employ children in hazardous work[4].

SHS company will adopt and implement human resources policies and procedures appropriate to its size and workforce that set out its approach to managing workers consistent with the requirements of national law. It will provide workers with documented information that is clear and understandable, regarding their rights under national labor and employment law and any applicable collective agreements, including their rights related to hours of work, wages, overtime, compensation, and benefits upon beginning the working relationship and when any material changes occur. It will provide and inform workers of an internal grievance process to raise their workplace concerns.

Collection of Batteries by SHS Companies: SHS company representatives will make arrangement to collect the battery units from the consumer and store it in the local offices. SHS company will take necessary measures to ensure safe storage of the batteries. It may be feasible for SHS company to send the warranty expired batteries to a central location.
Potential battery disposal / recycling options can be as follows:

[4] Employees may only be taken if they are at least 15 years old, as defined in the ILO Minimum Age Convention (C138, Art. 2).Children under the age of 18 will not be employed in hazardous work. Children will not be employed in any manner that is economically exploitive, or is likely to be hazardous to, or to interfere with, the child's education, or to be harmful to the child's health, or physical, mental, spiritual, moral, or social development

Buy-back arrangements with manufacturers: SHS company can put in place buy-back arrangements with the battery manufacturers and ensure safe transportation of the batteries to the manufacturer. SHS company and manufacturers can mutually decide on cost sharing of collection and transportation of expired batteries, for example sign a Memorandum of Understanding signed between them;

Recycling at own facilities: SHS companies may consider establishing their own recycling facilities. Recycling of lithium ion batteries is possible but, according to research and practice, makes little economic sense. Lithium ion batteries can be recycled, but only at specified locations. Projects are currently underway in Europe, the United States and Japan to develop effective and feasible recycling technologies with a complete life cycle analysis of recycling;

Recycling at centralized locations in the country: If recycling facilities for lithium ion batteries exist, SHS companies must use those that meet Lighting global SHS quality standards and are considered safe and complainant with national regulations and World Bank standards;

Disposal: Lithium ion batteries may qualify as household hazardous waste. SHS company will ensure that the batteries are disposed in a particular designated area ensuring environmental and occupational health and safety in line with World Bank E&S standards and Environmental, health, and Safety Guidelines of the World Bank Group. SHS company will also comply with the government regulations, if any, regarding disposal of any of the components used in the battery units

ANNEX 3 SAMPLE QUESTIONNAIRE FOR LITHIUM BATTERIES MANAGEMENT

Name of Respondent:
Location:
Phone Number:

QUANTITIES AND COSTS OF LIBs:

a) How many LI Batteries do you need to power a solar panel?
b) How do you intend to process used LI batteries?
c) How much do you buy?
d) Do you supply to others in the sector?
e) How do you sell and to whom?
f) How are LI batteries delivered to you?
g) How are they Transported and what is your storage capacity
h) How much does it costs to store LIB?

END PRODUCT OF LIB RECYCLING:

a) What products do you intend to extract from the LI battery?
b) Do you have already established process that could be applied?
c) Do you intend to sell the end product locally or internationally?
d) To whom do you intend to sell these end products?

3. HEALTH, SAFETY AND POLLUTION CONTROL

a) Would you consider this business dangerous to your health and environment?
b) How long have you been in this business?
c) Have you observed any health challenges?
d) What other waste does the business produce?
e) How do you intend to dispose or manage the (se) other waste(s)?

4. WILLINGNESS TO INNOVATE AND MODERNIZE

a) Do you think your current practice meet international best practice?
b) Are you in discussion with your supplier for a buy back mechanism?
c) What aspects of your business particularly the end of life battery management do you think can be developed further to assist you?
d) In your estimation, how big do you think LIB recycling would become?
e) How many persons do you employ currently?
f) What are your major challenges

ANNEX 4 TERMS OF REFERENCE FOR CATALYTIC GRANT FACILITY MANAGER

ANNEX 5 STAKEHOLDER CONSULTATION

ANNEX 6 GRIEVANCE AND RESOLUTION FORM

SAMPLE GRIEVANCE AND RESOLUTION FORM

Name (Filer of Complaint): _____
ID Number: _____ (PAPs ID number)
Contact Information: _____District/Community mobile phone)

Nature of Grievance or Complaint:

_____
_____

Date	**Individuals Contacted**	**Summary of Discussion**
_____	_____	_____

Signature_____ Date: _____

Signed (Filer of Complaint): _____
Name of Person Filing Complaint: _____ (if different from Filer)
Position or Relationship to Filer: _____

Review/Resolution
Date of Conciliation Session: _____
Was Filer Present? Yes No
Was field verification of complaint conducted? Yes No
Findings of field investigation:

_____
_____

Summary of Conciliation Session Discussion:

_____
_____

Issues:

_____

Was agreement reached on the issues? Yes No
If agreement was reached, detail the agreement below:
If agreement was not reached, specify the points of disagreement below:

Signed (Conciliator): _____ Signed (Filer): _____

Signed: _____
Independent Observer

Date: _____

ANNEX 7 ENVIRONMENTAL CODE OF PRACTICE (ECOP)

Environmental Code of Practice Requirements

Batteries and potential environmental impacts

A central component of any remote solar power system such as those used in 'plug and play' systems and proposed under Component I of the Project is the use of rechargeable batteries. These batteries store the power generated during the daylight hours for later use. Rechargeable batteries include lithiumion Li-ion), nickel metal hydride (NiMH), nickel cadmium (Ni-Cad) and lead acid batteries (LAB).

Accordingly, this ECOP applies specifically to LAB and Ni-Cad batteries. These batteries, if improperly transported, stored and disassembled/recycled, can create long lasting environmental impacts due largely to the chemical and heavy metals such as mercury, lead, cadmium and nickel which are central components of these batteries. If released into the environment (via incineration and/or leakage and leeching etc.) these chemicals and heavy metals can create a number of health impacts including headaches, abdominal discomfort, seizures and comas. The main components of a lead-acid battery are lead (Pb) electrodes and lead dioxide (PbO2) electrodes immersed in a solution of water and sulphuric acid. These are generally contained in a plastic case made from polypropylene. In addition to lead which can create to a wide range of biological effects (including upon the kidneys, gastrointestinal tract, reproductive system and the nervous system) and is a recognized developmental and reproductive toxicant[1], lead acid batteries also contain sulfuric acid which is highly corrosive and can cause burns and damage to skin, eyes or the respiratory system. Both nickel and cadmium which are the central components to Nickel-Cadmium (Ni-Cad) batteries have potential negative impacts on both the environment and on human health. While the effects of nickel are generally less severe (in the absence of long term exposure to airborne nickel dust) and limited to skin irritations, cadmium is a carcinogen, which can lead to renal dysfunction and bone defects. Effective management of batteries can ensure that these potential negative impacts are not realized as a result of this Project. Indeed, through the increased awareness activities proposed, it is expected that the project, guided by this ECOP, will have the potential to have long-term positive impacts on communities and public health since many batteries of this type are used by these communities outside this project.

Battery Management Approach

The approach adopted seeks to avoid the potential environmental impacts created by improper

management of LAB and Ni-Cad batteries. Mitigation measures proposed comprise two fundamental stages or approaches namely (i) Community and user awareness and (ii) Direct management of used nickel cadmium (Ni-cad) and lead acid batteries (LABs) by the system suppliers.

Community and user awareness

As part of an initiative of informing the community of the risks associated with batteries under this Project, the PIU will carry out a broad battery awareness campaign. This campaign will not only focus on project participants and beneficiaries. Instead, the campaign will target all community members and as such will result in improved knowledge of the environmental issues associated with spent batteries, whether they are from people's cars, or other power supplies etc. Importantly, the communication campaign will include information on all the main battery types, irrespective of whether they are high toxicity (such as NiCad and LAB) or lower toxicity batteries (such as AA, or AAA batteries etc). The type of information to be included in the information campaign is included in Annex.

A campaign will be designed by the Project; however, it is expected that it will include initiatives such as:

- Information on the implementing agencies website on disposal of all battery types;
- Appropriate local information campaigns including distribution of flyers and information sheets in local communities, awareness raising at community meetings and notices at shops selling batteries; and
- A media campaign including advertisements and awareness pieces in local newspapers.

This campaign will run for the life of SEAP and will address issues such as:

- The differences between the battery types in terms of battery life and reliability;
- The safe handling of batteries including installation, removal, transport, storage and disposal;
- The environmental and health aspects of poor battery disposal; and
- Focused information on the environmental and health issues associated with high toxicity batteries and explanation as to why they must be stored, transported and disposed of in certain ways and therefore why it is in the interests of individuals, the community, the environment (and therefore future generations in communities) that the methods outlined in this ECOP be followed.

Direct management of used nickel-cadmium (Ni-cad) and lead acid batteries (LAB) by the system suppliers

The disposal and management of used batteries from solar PV systems will follow the provisions of this ECOP, which is to require the vendors of the systems to make arrangements to collect used Ni-Cad and LAB batteries and to properly dispose of them. Notwithstanding this, the direct management process outlined below is focused on Li-ion, nickel-cadmium (Ni-cad) and lead acid

batteries (LABs) as these batteries represent the greatest risk to human and environmental health if incorrectly managed. The vendors will provide a Battery Management Plan which details arrangements for the collection, transport, storage and disposal of batteries for those systems proposed to be eligible under the Project as part of the product registration process. The DoE will assess these processes for compliance with the guidelines set out in this ECOP and may refuse to register vendors' products if they do not comply with the guidelines. A vendor may be refused registration by the DoE under the vendor registration program if the vendor fails to provide evidence on the arrangements for collecting/recycling batteries and redundant solar systems, or failure to compliance with this ECOP.

The Implementation Agreement (Legal Agreement) will require the vendors to comply with this ECOP as a condition of participation of the program. The catalytic grant manager will monitor compliance with the ECOP.

The World Bank Team, as part of its supervision mission of the Project, will conduct random checks on the Project's compliance to battery disposal and management consistent with the ECOP. This ECOP may be superseded by national legislation and detailed regulations on the disposal of batteries, if the requirements of the legislation and regulation meet or exceed the requirements of this ECOP.

Occupational and Bystander Health and Safety

The systems must be installed by qualified and experienced tradespeople in order to avoid or minimize electrocution and other health and safety issues such as keeping bystanders away from work areas, working at height and working with hazardous materials such as batteries.
The project operations manual sets out the minimum requirements for Vendor qualifications and product standards for work on this Project.

Permission to use land

Most systems will be installed on the landowner or occupier's property (roof top or pole), and there will be no land related issues. Micro-grids may need to distribute electricity between buildings and may cross third party land. Beneficiaries will be required to seek and confirm permission before works begin.

Specific Requirements under this ECOP

Before working with a battery

Training in proper handling procedures is very important. Key aspects include:

- Consult battery owners' manuals for instructions on battery handling and hazard identification
- Wear personal protective equipment (PPE) such as chemical splash goggles and a face shield

- Wear acid-resistant equipment such as gauntlet style gloves, an apron, and boots
- Do not tuck pant legs into boots because spilled acid can pool in the bottom of your boots and burn
- your feet
- Place protective rubber boots on battery cable connections to prevent sparking on impact if a tool
- does accidentally hit a terminal
- Clean the battery terminals with a plastic brush because wire brushes could create static and sparks
- Always remove your watches and jewelry before working on a battery. A short-circuit current can
- weld a ring or strap to metal and cause severe burns
- Cover maintenance tools with several layers of electrical tape to avoid sparking

-

Chemical hazards posed by batteries

Sulfuric acid (electrolyte) in batteries is highly corrosive and acid exposure can lead to skin irritation, eye damage, respiratory irritation, and tooth enamel erosion. Following the following principles will assist in managing this risk:

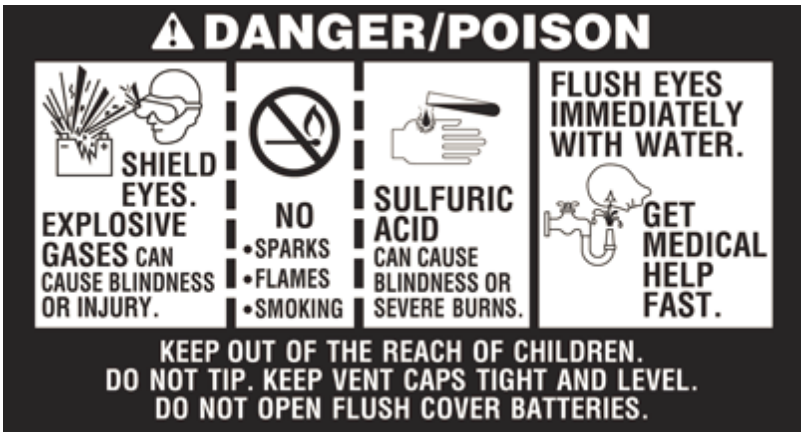
- Never lean over a battery while boosting, testing or charging it
- If acid splashes on your skin or eyes, immediately flood the area with cool running water for at least 15 minutes and seek medical attention immediately
- Always practice good hygiene and wash your hands after handling a battery and before eating. If you handle the lead plates in a battery and do not wash your hands properly, you could be exposed to lead. Signs of lead exposure include mood swings, loss of appetite, abdominal pain, difficulty sleeping, fatigue, headaches and loss of motor coordination.
- The chemical reaction by-products from a battery include oxygen and hydrogen gas. These can be explosive at high levels. Overcharging batteries can also create flammable gases. For this reason, it is very important to store and maintain batteries in a well-ventilated work area away from all ignition sources and incompatible materials. Cigarettes, flames or sparks could cause a battery to explode.
- Before working on a battery, disconnect the battery cables. To avoid sparking, always disconnect the negative battery cable first and reconnect it last. Be careful with flammable fluids when working on a battery-powered system. The electrical voltage created by batteries can ignite flammable materials and cause severe burns. Workers have been injured and killed when loose or sparking battery connections ignited gasoline and solvent fumes during system maintenance.

Safe Battery Movement

Lifting and moving batteries needs to be undertaken with care so as to avoid personal and environmental harm. Key principles include:

- Use proper lifting techniques to avoid back injuries

- Battery casings can be brittle and break easily; they should be handled carefully to avoid an acid spill
- Make sure that a battery is properly secured and upright in the vehicle or equipment
- If a battery shows signs of damage to the terminals, case or cover, replace it with a new one



Battery Disposal

For Lead Acid and NiCad batteries, the supplier will ensure that a system is in place to obtain and properly dispose of these batteries at the time of battery replacement.

Recycling

Lead recycling operations require a high degree of control because of the potential hazards from air emissions and wastewater discharges.

Landfill Disposal (Hazardous Waste Facility)

If recycling of batteries is not chosen or possible, disposal in a secure landfill is the next preferred option. The acid should be removed from the casing and neutralized. Empty battery cases must be disposed of carefully because they can still contain significant amounts of lead. Batteries should then be wrapped in heavy duty plastic or encapsulated with concrete. The concrete and plastic serves the purpose of ensuring that lead will not leach out and become mobile in landfill leachate, thus reducing the environmental risk.

Capacity-Building and Monitoring of ECOP Implementation

As part of the capacity building to be provided for implementation of the proposed operations, the vendors and implementing agencies staff will receive training in the ECOP's application. The World Bank will monitor and provide guidance in the implementation of the ECOP. Catalytic grant

manager will be responsible, besides other functions, to monitor and supervise the implementation of the ECOP by Vendors.

Disclosure

This ECOP will be shared with all relevant stakeholders, relevant line departments, concerned nongovernmental organizations, and development partners. Subsequently, it will be disclosed in English and somali language by PIU, and made available on their websites. Copies will also be held at public buildings, such as libraries and offices of regional authorities, for the rural communities to access.

ANNEX – Information for Battery Awareness Campaign

Introduction

Most homes and businesses contain many pieces of equipment such as portable computers, cell phones, power tools, standby or backup power systems, cameras, security equipment, radios, torches,etc. that depend on batteries to operate. As a result, batteries have become integral to the functioning of our economy and support many aspects of modern lifestyles. These households and businesses use a number of different types of batteries which have different chemistries.

Non-rechargeable, single-use batteries used in clocks, toys, cameras and remote controls can be eitheralkaline and zinc-carbon (AA, AAA, D, C, 9-volt dry cell), mercuric-oxide (button, cylindrical and rectangular) or lithium (AA, C, button, 9-volt). These batteries are also known as “primary” or singleusebatteries because they are normally not recycled and are disposed of after use.

Rechargeable batteries (also referred to as “secondary” batteries) use lithium-ion (Li-ion), nickel metal hydride (NiMH) or nickel cadmium (NiCd) chemistry. These are found in such products high end products as camcorders, mobile phones, laptops and cordless power tools, shavers, and electric toothbrushes.

Lead-acid batteries are the oldest type of secondary batteries. They are used to supply electrical power to cars, trucks, tractors, motorcycles, and boats. Small sealed lead-acid batteries are used for emergency lighting and uninterruptible power supplies.

Used batteries, whether primary or secondary, are potentially hazardous, so they need to be stored and handled carefully. Some of the materials inside a battery are toxic and may damage skin and clothes if the battery is damaged or leaking. Used batteries require careful handling to minimize safety hazard such as explosion and fire and good management to avoid pollution of soil, surface water and groundwater by storing them under cover and in a bunded area. The three main types of batteries in common use in solar energy systems are described below

Lithium Batteries

There are two types of lithium batteries in common use: (i) primary (non-rechargeable) metallic lithium (Li) batteries, which are small in size and have a long life and are used to power toys and small electronic devices; and (ii) secondary (rechargeable) lithium ion (Li-ion) batteries, which are one of the lightest rechargeable batteries available and which are found in more expensive products such as laptops, cameras, mobile phones, power tools and now increasingly in solar powered devices. Large lithium batteries are found in other applications such as backup power, electric cars and some newer air planes. Lithium batteries use lithium in its pure metallic form while Li-ion batteries use lithium compounds which are much more stable than the elemental lithium used in lithium batteries.

Both types of lithium batteries can be recycled. During collection, they can be mixed with other battery types in the collection container as long as certain packaging requirements are met. Larger lithium batteries (>500g) batteries can be collected but require separate storage from smaller handheld batteries. The risks associated with lithium battery recycling include the potential for a fireor explosion if batteries become over-heated from sun or for example, if they short-circuit.

Nickel Cadmium / Nickel-Metal Hydride Batteries

Nickel-Cadmium (NiCd) batteries were the first reasonably priced rechargeable consumer batteries. They are being superseded by new rechargeables Nickel-Metal Hydride (NiMH) batteries. Nickel-metal Hydride batteries are related to sealed nickel-cadmium batteries and only differ from them in that instead of cadmium, hydrogen is used as the active element at the anode. The energy density of NiMH is more than double that of Lead acid batteries and 40% higher than that of NiCd. Like NiCd batteries, Nickel-metal Hydride batteries are susceptible to a "memory effect" although to a lesser extent. They are more expensive than Lead-acid and NiCd batteries, but they are considered better for the environment.

Lead-Acid Batteries (LAB)

The main components of a lead-acid battery are lead (Pb) electrodes and lead dioxide (PbO2) electrodes immersed in a solution of water and sulphuric acid. These are generally contained in a plastic case made from polypropylene. While LAB has a history of reliability, is available worldwide, and is widely recycled, it is also bulky and heavy, prone to gassing, and sulphation. The heavy metal element (lead) of the battery makes the battery toxic and improper handling and disposal of the acid and lead can be hazardous to health and the environment.

Why Recycle?

Batteries pose a risk to human health and the environment if disposed of inappropriately. They contain heavy metals that are toxic to human health and/or have eco-toxicity impacts if they exceed certain minimum concentrations in the natural environment. Lead, mercury and cadmium are particularly toxic, but other metals such as nickel can also be of concern if they leach into surface or ground water. Batteries also contain valuable metals such as cadmium, lead, zinc, manganese,

cobalt and rare earth metals that can be recovered to minimize the use of natural resources and to reduce impacts on the environment which occur in the production, distribution and end-of- life phases of the battery life-cycle.

Single-use batteries have significant environmental impacts at every stage of their life cycle. The manufacture of batteries require use of chemicals to purify metals, extraction of resources by mining (with potential destruction of wildlife habitat) and production of power by burning fossil fuels; which in turn contribute to global warming, and creation of air and water pollution. The importation / transport of batteries require yet more infrastructure development and energy usage. In landfills, the chemicals inside batteries can leach from their casings and pollute soil and water with toxic heavy metals if the batteries are not properly recycled.

The technology for recycling secondary (rechargeable) batteries are well known and widely deployed in developed and some developing countries. Used LABs are widely collected and recycled (almost 96% collection in North America). NiCad and Lithium batteries are only now being recycled. However, in most developing countries, the economics of battery recycling is not sustainable. The cost of handling batteries (collection, storage, packaging), and transport, especially in rural areas, far exceed the cost of recycling the batteries. As a result, in most developing countries, lacking recycling facilities, used batteries are invariably discarded to the environment. Sometimes used LABs are collected, packaged and exported overseas for recycling, the economics depending on the price of lead and cost of transportation.

The technology for recycling primary (single use) batteries though available is not widely used, largely because of cost of recycling and because of battery collection (supply) problems. It is only now being deployed in North America, Europe and other developed countries.

Although recycling may not be a near term option, batteries – primary and secondary – should be collected and safely stored for transport to an environmentally safe and secure location for future processing or to a recycling facility.

Battery Comparison Table (II)					
Rechargeable (secondary) Batteries					
					
Battery Type	**Nickel Cadmium**	**Nickel Metal Hydride**	**Lithium-Ion**	**Lead Acid**	**Sealed Lead Acid**
Common Name(s)	Ni-Cd, Ni-Cad	NiMH, Ni-Li, Ni-Hydride	Li-Ion, Lithium Iron Phosphate	car battery, starting battery, wet cell, deep cycle	SLA, SSLA, valve-regulated, VRLA, Gel
Common Applications	modern off-grid lighting, powertools, cordless phones, professional radios, medical, household*	modern off-grid lighting, laptops, cell phones, household*	laptops, cell phones, handheld electronics	Cars, trucks, and other vehicles, standby/backup systems	off-grid lighting, wheelchairs, backup power systems
Estimated Cycle Life[1]	300-1000	500-1000	500-2000	200-700	300-1000
Advantages	Low cost, rugged, higher energy density than SLA	Higher energy density than Ni-Cd, no cadmium	light weight, high energy density	inexpensive, rugged	inexpensive, rugged
Disadvantages	contains cadmium memory effect	High self discharge higher cost compared to Ni-Cd	highest cost rechargeable, requires protection circuit	Heavy, low energy density, low cycle life, contains lead	Heavy, low energy density, contains lead
Toxicity[1]	Highly toxic- contains cadmium	Low to Moderate	Low	Highly toxic- contains large amounts of lead	Highly toxic- contains large amounts of lead
Disposal	Recycle or Hazardous Waste Disposal	Landfill in small quantities (<10 cells). Recycling recommended.	Landfill in small quantities (<10 cells). Recycling recommended.	Recycle or Hazardous Waste Disposal	Recycle or Hazardous Waste Disposal
Recycling[2]	Cadmium and ferronickel can be recovered which yield a moderate market price.	Recycle to recover nickel. NiMH is the most cost-effective battery to recycle because of the high market value for scrap nickel.	Cobalt and other metals can be recovered which have a high resale value, but the recycling process is more complex (ie more expensive).	The most commonly recycled battery worldwide. Lead and plastic casings can be recovered. Moderate market value for scrap lead and a mature resale market.	The most commonly recycled battery worldwide. Lead and plastic casings can be recovered. Moderate market value for scrap lead and a mature resale market.
[1]Battery University:http://www.batteryuniversity.com/partone-3.htm Product					
[2]Relative market prices for battery scrap metal were obtained from Todd Coy, Toxco battery recyclers, phone conversation, 24 June 2008.					
*Commonly found in AA, AAA, 9V, etc sizes for regular household use.					