



| Webinar

Developing Mini-grids to
IFC Environmental & Social
Performance Standards

Session 2

5 December 2018

Agenda

- 1 Welcome and introduction to AMDA
- 2 Introduction to REPP
- 3 Summary of part 1 of the Webinar
- 4 Establishing ESMS: Management Plans
- 5 Case Study: PowerHive in Kenya
- 6 Question & Answer

About AMDA



Origin

The Africa Minigrid Developers Association was created by minigrid developers and donors to improve political and financial understanding of, and support for, minigrids and the rural communities they serve.

Mandate and value addition

1. Create a benchmarking dataset for the sector based key performance indicators from hundreds of minigrid sites.
2. Provide guidance to financiers and policymakers on creating the best environment to reach clean energy access goals via:
 1. Integrated climate / energy planning and policymaking
 2. Building local markets and jobs with and for energy services

REPP

Renewable Energy Performance Platform

Objectives

Mobilise private sector investment in renewable energy in Sub-Saharan Africa.

Addressing early-stage barriers to project development.

Focus on small to medium-sized renewable energy projects (on and off grid).

REPP Products

Development assistance funding, technical and financial advisory.

Facilitating access to risk mitigation instruments and finance provided by REPP partners.

Gap financing (e.g. bridge construction finance).

REPP is managed by Camco Clean Energy



Supporting the growth of Africa's renewable energy sector



194 MW

Total planned capacity

3.5m

People with improved or first time access to energy



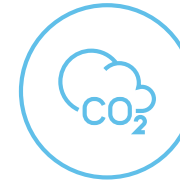
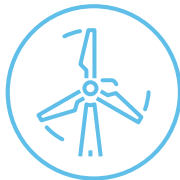
16

Contracted projects



7

Technologies deployed



**>6.7m
tCO2e**

Avoided over project lifespan

 **REPP**



US\$13.1m

Committed capital from REPP



22

Projects in advanced proposal phases



| Overview of Day 1

Laura Lahti
Impact Manager
Camco Clean Energy

Why IFC is Required?

The **IFC Performance Standards** (PS) helps to improve the **environmental and social performance** of a project through an outcomes-based approach.

It also provides a solid foundation from which project developers may increase the sustainability and productivity of their operation.

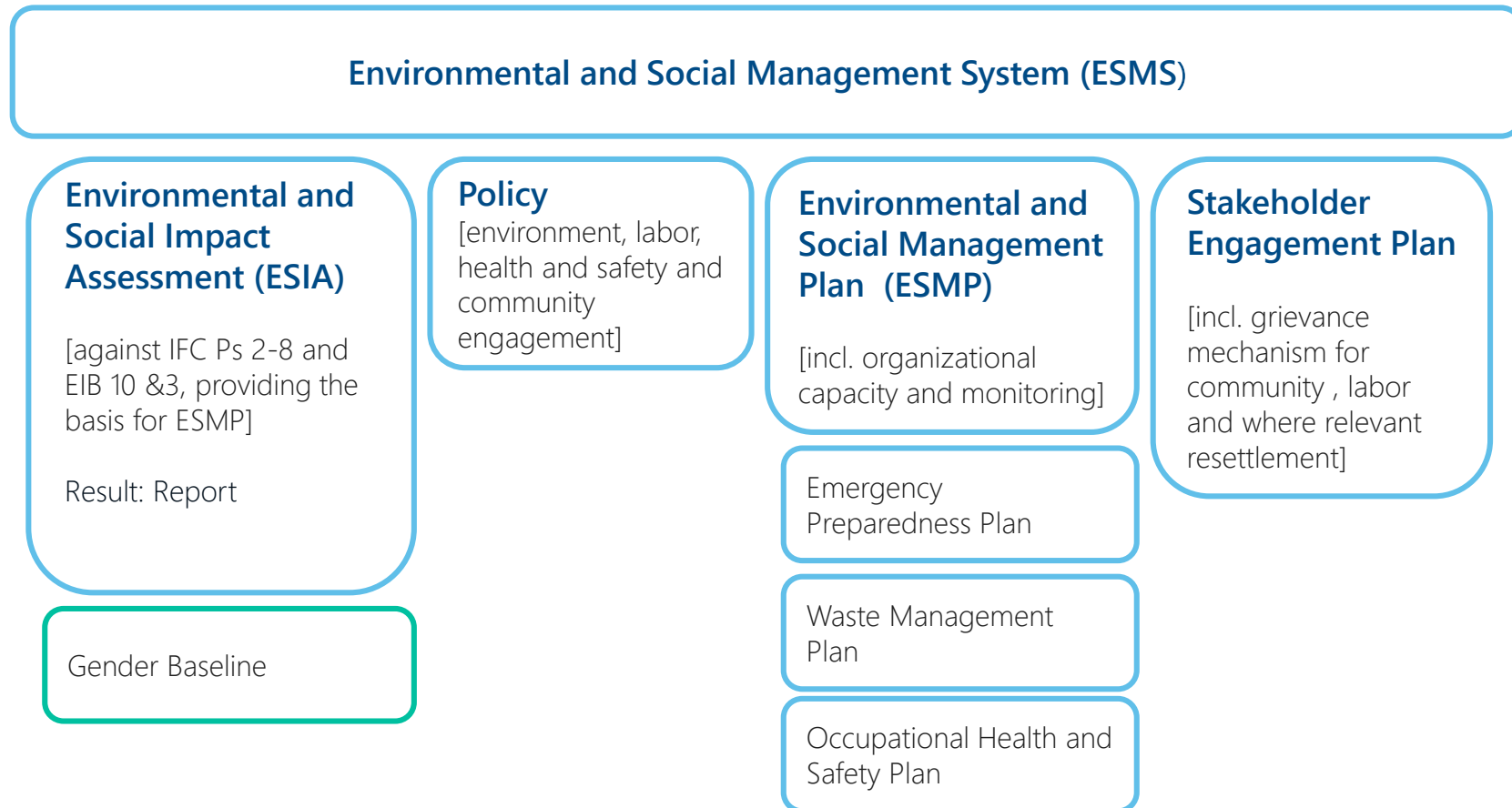
IFC Performance Standards **provide an international benchmark** for identifying and managing environmental and social risk.

REPP, among other Development Financing Institutions and investors, requires IFC PS compliance from project developers receiving funding to guarantee environmental and social integrity of the projects.



General Structure

Environmental and Social Management System



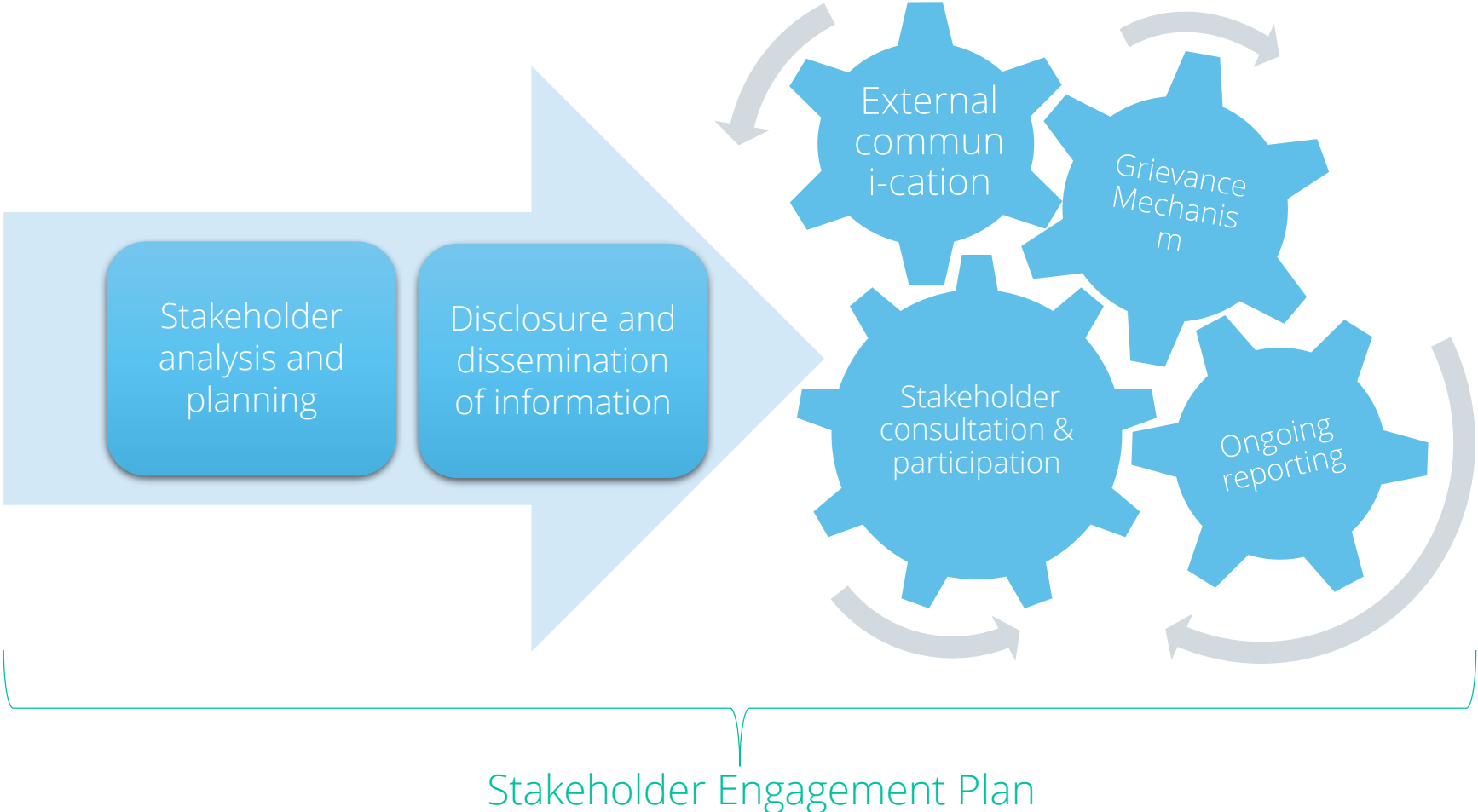
Most important elements of ESMS for mini-grids!

Identified Risks and Impacts (IFC PS2)



Stakeholder Engagement (IFC PS1)

Environmental and Social Management System





Establishing E&S
Management System
(part 2)

Laura Lahti
Impact Manager
Camco Clean Energy

Content

- 1 Waste Management
- 2 Occupational Health and Safety
- 3 Emergency Response and Preparedness
- 4 Monitoring and Review

Waste Management (IFC PS3)

Environmental and Social Management System

Key Considerations:

- Solar-mini grid's footprint generally small, such as waste streams during site clearance, construction and operation;
- Municipal waste goes to landfill;
- Management of hazardous waste is crucial.

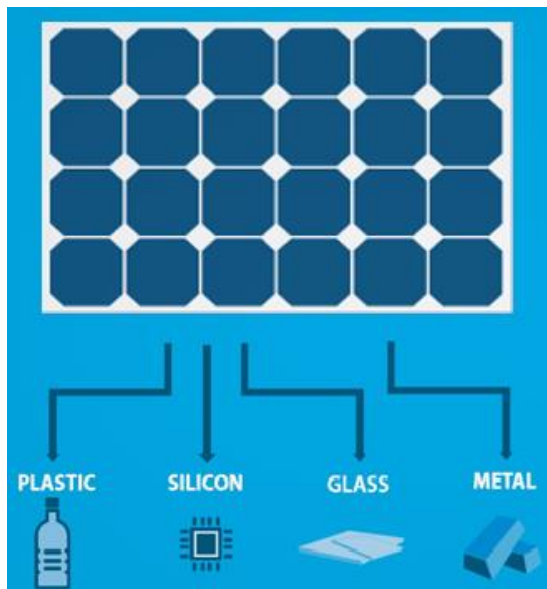
Project-level approach to resource efficiency and pollution prevention aims to avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities.



Waste Management Plan

Environmental and Social Management System

Establish waste management plan for the project, including actions for the appropriate handling and recycling or disposal.



Source: www.powerfromsunlight.com

Key Steps:

- Identify waste types and hazardous materials/ e-waste;
- Establish processes e.g. appropriate separation and materials storage;
- Define roles and responsibilities;
- Provide training;
 - Site briefings – briefing of key personnel
 - Notice boards – posters as reminders
 - Training –will vary depending on job roles
- Keep records of hazardous waste disposed;
 - Amounts
 - Date
 - Where disposed and by whom.

Waste Management

Environmental and Social Management System

Avoid or minimize

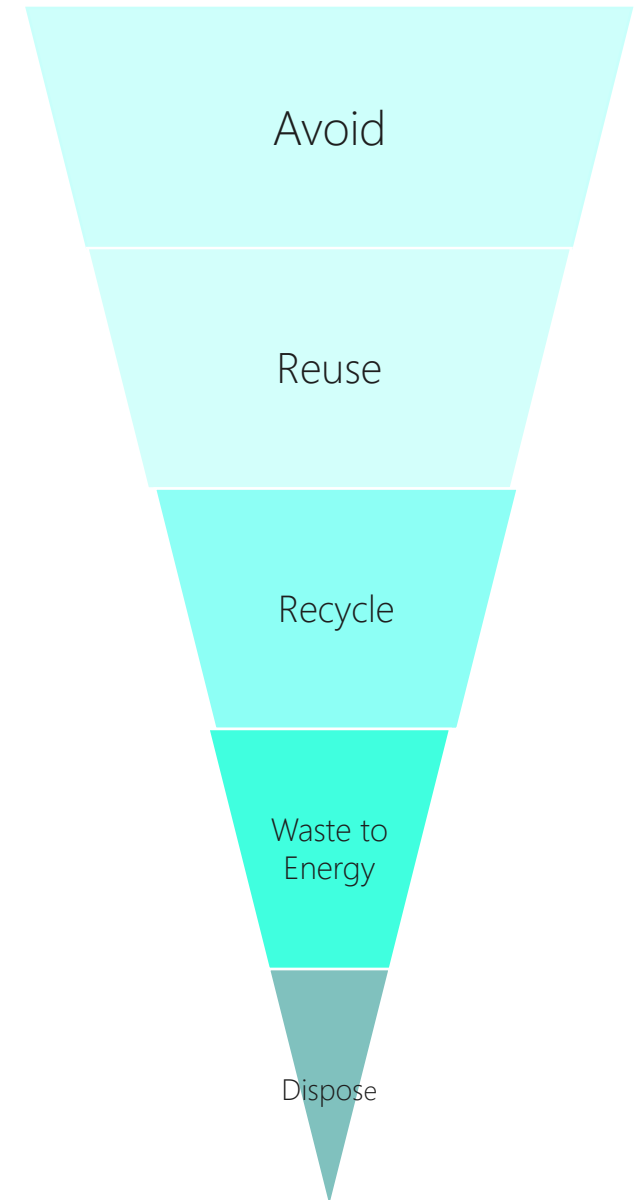
- Choose non-toxic panels
<http://www.solarscorecard.com/>
- Zinc-air over Lithium-ion over Lead acid when choosing battery

Appropriately manage

- Are fuel and other hazardous materials securely stored and above flood level?
- Storage of faulty batteries and solar panels?

Recycling or disposal

- Is construction waste disposed of in a manner which minimize pollution?
- Consider Extended Producer Responsibility
- Work with licenced operators
- Obtain disposal certificates



Occupational Health and Safety (IFC PS2)

Environmental and Social Management System

Establish a **corporate-wide staff policy**, stating:

- Fair treatment, non-discrimination, equal opportunity;
- Good worker–management relationship;
- Comply with national employment and labour laws;
- Protect workers, in particular those in vulnerable categories;
- Promote safety and health;
- Ensure no use of forced labour or child labour.

ILO Convention concerning Minimum Age for Admission to Employment and ILO Recommendations on Child Labour *the minimum age for work should not be below the age for finishing compulsory schooling and in any case not less than 14... ..Any hazardous work which is likely to jeopardize children's health and safety should not be done by anyone under the age of 18.*



Policy
considerations

Good Practice Considerations

As part of Occupational Health and Safety

Identify hazards

What can cause accidents?

- Consider different stages of the project and think of:
 - Moving equipment or vehicles;
 - Exposed or faulty electrical devices;
 - Welding / hot work;
 - Eye hazards;
 - Noise;
 - Working at height;
 - Working in remote locations (communication & emergency);
 - Exposure to chemicals;
 - Exposure to fires.



Good Practice Considerations

As part of Occupational Health and Safety

Eliminating the hazard

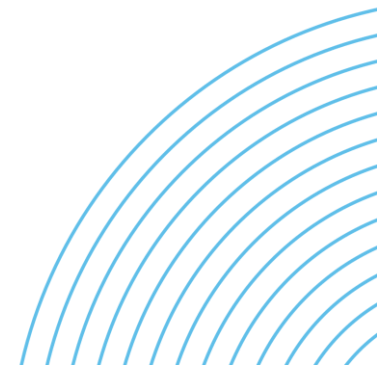
How to prevent and protect from accidents?

- Eliminate or minimize the hazard through design of safe work systems and institutional control measures, such as training safe work procedures, limiting exposure or work duration, etc.
- Provide appropriate personal protective equipment (PPE) in conjunction with training, use, and maintenance of the PPE.

Questions to consider:

- Have warning signs been installed on all hazardous electrical equipment, the fences, power poles, etc.?
- Are lightning protection and earthing installed on all required electrical equipment?

Document and report training provided as well as of occupational incidents, and employees complaints.



Checklist

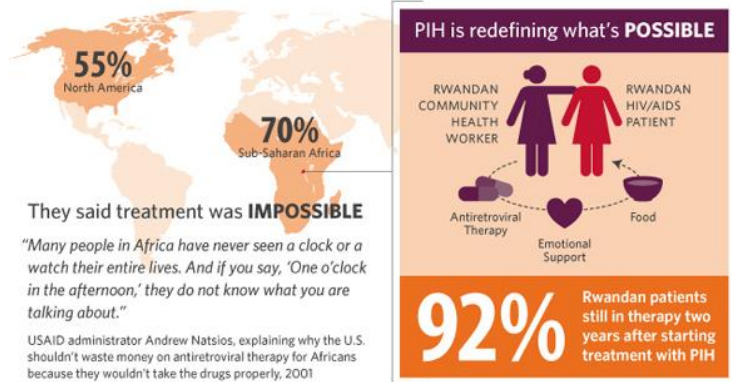
As part of Occupational Health and Safety

During construction

- Is public health information provided to the construction workforce prior to the commencement of on-site work, primarily covering the prevention of HIV/AIDS?
- Enforce prohibition of sexual harassment of any nature by employees in Labour policy.
- Are construction activities restricted to daylight hours, with local communities informed of the schedule?
- Are construction camps required?



Percent of HIV-Positive People Who Stay on Treatment



Third Party and Supply Chain Considerations

Occupational Health and Safety

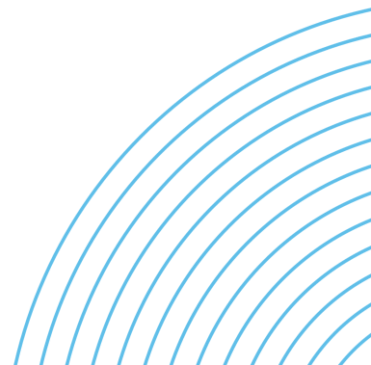
Workers engaged by third parties

- Take commercially reasonable efforts to ascertain that third parties who engage their workers are reputable and legitimate enterprises with appropriate ESMS.
- Ensure access to grievance mechanism by contracted workers.

Establish policies and procedures for managing and monitoring the performance of third-party employers.

Supply chain

- Where there is a high risk of child/forced labour in the primary supply chain, identify those risks, take appropriate steps to remedy them, and monitor its primary supply chain on an ongoing basis.



Emergency Preparedness and Response (IFC PS1)

Environmental and Social Management System

Establish and maintain an **emergency preparedness and response system** including **identification of areas where accidents and emergency situations may occur**, communities and individuals that may be impacted, response measures, provision of equipment and resources, training, review etc. in a manner appropriate to prevent and mitigate any harm to people and/or the environment.

Plan ahead. Not after.



Fire



Severe
weather



Urgent
Situation

Good Practice Considerations

Emergency Preparedness and Response Plan

Procedures to respond

- shut down equipment;
- rescue and evacuation.

List and location of emergency response (equipment)

- fire fighting;
- spill response;
- first aid kits.

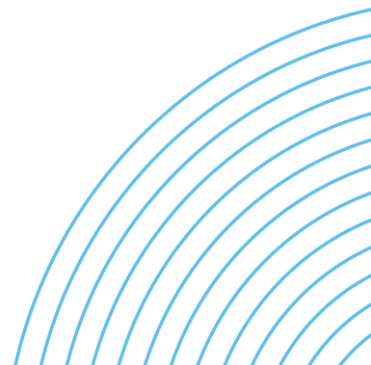
Protocols for the use of the emergency equipment and facilities;

- schedule for periodic inspection, testing and maintenance;
- clear identification of evacuation routes and meeting points;
- schedule of trainings including with local emergency response services (fire fighters).

Emergency contacts and communication

protocols, including with communities when necessary, and procedures for interaction with the government authorities.

Procedures for **periodic review and update** of emergency response plans.



Security Personnel (IFC PS2-4)

Environmental and Social Management System

Identify and assess risks posed by project's security arrangements to those within and outside the project site.

- Is the project site fully enclosed?
- Do appropriate procedures and signage to warn about trespassing exist?

Remember to include security personnel in relevant training:

- OHS (incl. HIV/AIDS)
- Emergency preparedness
- Community considerations



Consider site security

Community health, safety, and security (IFC PS4)

Environmental and Social Management System

Key considerations:

Infrastructure and equipment design and safety:

- Warning signs on all hazardous electrical equipment, fences, power poles;
- Lightning protection and earthing installed on all required electrical equipment.

Hazardous materials management and safety:

- Waste management plan.

Community exposure to disease:

- HIV/AIDS taring and sexual assault awareness as part of OHS.



Minimize the risks and impacts to community health, safety, and security

Monitoring and Review (IFC PS1)

Environmental and Social Management System

Establish procedures to monitor and measure the effectiveness of the management program as well as compliance with any related legal and/or contractual obligations and regulatory requirements.

Document monitoring results and identify and reflect the necessary corrective and preventive actions in the amended management program and plans.

Extent and frequency of monitoring should be compatible with the potential impacts and risks of the project.



**You Can't Manage
What You Don't
Measure!**

Good Practice Questions

Monitoring and Review

Performance Indicators

- What parameters you monitor to determine your success?

Monitoring Protocol

- How frequently you collect data?
- What methods, tools, and equipment you use to collect and analyse samples?
- What standards or benchmarks you use to establish acceptable values?
- Who is responsible to collect, analyse, and act upon the data?

Monitoring Records

- How you know if you are working towards that indicator?
- What records you maintain and review?

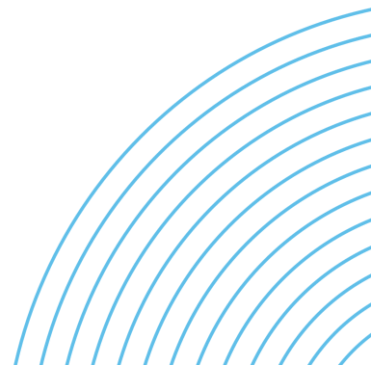
Means of Monitoring

Visual observation i.e. physical walk-throughs of the facility and surrounding land.

Interviews i.e. consultations with workers, managers and external stakeholders.

Measuring and testing i.e. checking using equipment that is properly calibrated. (Examples include energy consumption, noise decibel levels, dust levels)

Document review i.e. looking through documents and records. Examples include energy bills, waste disposal records, complaints logs, training records.)



The Connected Village

CONCEPT



POWERHIVE VILLAGE CONCEPT

- Powerhive is a US-based micro-grid developer operating across 16 sites in Kenya since 2011
- The sites vary in capacity from 10kw across 200 households; to 60kw across 700 households
- With 3000 customers
- Packages include value added incentives, such as Wifi, Kuku Poa, and Agro projects

ESIAs as basis of ESMS development

The ESIA reports were prepared and submitted by Peman Consultants Ltd. NEMA Reg. No. 2798.

The ESIAs were carried out between 2012 and 2016. Currently 6 ESIAs are being completed for additional sites, whose construction take place this month.

ESIAs provided the basic environmental and social risks and impacts and how these are monitored.

ESIAs also provide an opportunity to initially communicate with the customers, and key organisations that might be willing to invest or support in the project

Although really important, the ESIA does not provide the following supporting organisational structures or to ensure environmental and social impacts are monitored and reported consistently:

- Occupational Health and Safety Policies and Procedures;
- Stakeholder Engagement Plans and Procedures;
- Grievance Mechanism;
- Emergency Preparedness Response Plan;
- Waste Management Plan and Recycling Initiatives for corporate growth;
- Capacity Building for the Community and in-house

Guidance from the template

The establishment of the ESMS work commenced in August upon notification as a mandatory requirement by REPP.

The template has served remarkably as a guide towards establishing fundamental policy regarding E&S objectives and the associated responsibilities for the policy's execution.

The guidance document provided direction on which questions to be answered by each policy and how to go about developing the roles and responsibilities to support each policy.

PowerHive has been able to develop clear and concise policies that have been accepted by other international donors.

A key aspect of the project that has been developed through the guidance of the template is the stakeholder engagement as well as the grievance mechanism. This has allowed PowerHive to provide a valuable and safe service to our customers, ensure our employees are safe and well-trained and ensure that any waste generated will be disposed of in a safe manner.

PowerHive has also been able to establish a simple monitoring and reporting program, with guidance in assessing the plan's appropriateness, that responds to REPPs KPIs reported on a quarterly basis. This reporting mechanism also aligns with other donor reporting requirements.

Sample Community Engagement Gate



Thank you!

Questions? Use Q&A chat channel.

For more information, please contact:

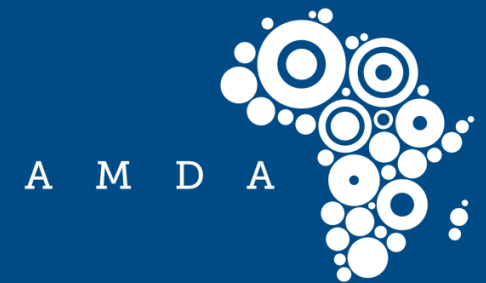
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