Private Infrastructure Development Group

Lithium Battery Safety Guidance Development

The Private Infrastructure Development Group (PIDG) is requesting an all-inclusive, capped fee quote that encompasses all relevant taxes and statutory deductions for the development of a Lithium-Ion Battery Safety Guidance. Please note that any information included in or shared alongside this proposal request should be treated as confidential.

About PIDG

The Private Infrastructure Development Group (PIDG) aims to alleviate poverty by mobilizing investments in infrastructure projects across sub-Saharan Africa and Asia. PIDG invests directly in early-stage projects or provides funding to experienced teams to lead project development.

Engagement Overview

PIDG is looking to develop a comprehensive Lithium-ion Battery Safety Guidance that will serve as a reference for the Group and its project companies that utilise lithium-ion batteries in various applications. Therefore, PIDG is seeking consultancy services regarding the following scope of work (the "Scope of Work").

Requirements

The Lithium-Ion Battery Safety Guidance is designed to enhance safety knowledge regarding the handling, storage and emergency response of lithium-ion battery usage in PIDG projects, in the following specific sectors:

- Solar home systems;
- Electric vehicles (EVs) – EV charging stations, EV battery swapping stations and EV battery assemblies; and
- Roof and ground-mounted mini-grids.

The goal is to eliminate or minimize incidents associated with the use of these batteries. Therefore, PIDG seeks to engage a Consultant with relevant experience and expertise in lithium-ion battery safety and in developing the Lithium-Ion Battery Safety Guidance.

We are seeking three separate guidance documents which utilise the same format, share some of the same content, and also provide reference to the specific sectors. Please see ***Table 1*** for guidance.

Scope of Work

1. In a guidance format, develop content relevant to lithium-ion battery safety, including but not limited to the below topics:
   a) **Overview and Background**: Basic principles of lithium-ion battery technology, including how they work and their typical applications (solar home systems, EVs, and roof and ground-mounted mini-grids), and the risks of using lithium-ion batteries;
   b) **Battery Hazards**: Potential hazards associated with lithium-ion batteries, such as fire and explosion risks, toxic gas and chemical exposure, electrical dangers, and environmental waste issues;
   c) **Safe Handling and Storage Practices**: Current best practice procedures for handling, transporting, and storing lithium-ion batteries to prevent accidents and injuries;

d) **Fire Prevention and Emergency Response**: Use of appropriate fire suppression systems and equipment, and emergency response procedures in case of a battery-related incident, such as fires or chemical spills, to ensure a swift and effective response;
e) **Personal Protective Equipment (PPE**): Guide on selecting and using appropriate PPE when working with lithium-ion batteries to minimise exposure physical hazards and harmful substances;
f) **Recycling and Disposal**: Best practices for recycling and disposal to mitigate environmental impact and promote sustainability.
g) **Project Specific Risk Assessment:** Guidance on how each project company should assess the lithium-ion battery safety risk on their project considering safe storage handling and disposal and develop mitigation measures and an action plan to manage the risk. Include a **Risk Assessment Template** as an Appendix.
h) **Inspection and Monitoring:** Guidance on-site inspection requirements. Include a **Site-Specific Inspection Checklist** as an Appendix.
i) **Training and Awareness**: Guidance on what training is required to maintain safe operation; focusing on battery safety and fire response procedures; adherence to applicable standards; use of safety signages etc.;

2. The Consultant shall develop three (3) sets of guidance for the different sectors (solar home systems, EVs, and roof and ground-mounted mini-grids). Guidance on what material can be the same and what should be sector specific is given in ***Table 1***. The Consultant should also advise if separate or additional topics relevant to the above sectors and suitable for the Guidance should be included as well.
3. The Battery Safety Guidance shall include at least one (1) battery incident case study for each sector (and preferably for each region, Africa and Asia).
4. The Battery Safety Guidance shall also include suitable illustrations and images to enhance the engagement and understanding of the readers.

Table 1: Guidance on Topics and Content

Topic	**Content**	
	Generic	**Sector Specific Information Required**
Overview and Background	Yes	No
Battery Hazards	Yes	No
Safe Handling and Storage	No	Yes
Fire Prevention and Emergency Response	No	Yes
Personal Protective Equipment	Yes	No
Recycling and Disposal	Yes	No
Project Specific Risk Assessment	Yes	No
Inspection and Monitoring	No	Yes
Training and Awareness	No	Yes
Risk Assessment Template	Yes	No
Safety Inspection Checklist	No	Yes

Deliverables
The Consultant will prepare the following deliverables in the following order:

Step 1: Lithium-Ion Battery Safety Guidance for Solar Home Systems Sector

1. Lithium-ion Battery Safety Guidance - Solar Home Systems document in editable Word format
2. Risk Assessment Template in Word/Excel format
3. Safety Inspection Checklist – Solar Home Systems in Word/Excel format

PIDG will provide one set of consolidated comments on each document. Consultant to update accordingly. If PIDG is not satisfied that comments have not been addressed adequately, a second set of comments will be provided.

Approval from PIDG will be required prior to proceeding to **Step 2**.

Step 2: Lithium-Ion Battery Safety Guidance for Roof and Ground-Mounted Mini-Grids, and EV Sectors

On satisfaction of **Step 1** – Consultant to proceed with **Step 2**:

1. Lithium-ion Battery Safety Guidance – Roof and Ground-Mounted Mini-Grids document in editable Word format
2. Lithium-ion Battery Safety Guidance – EV document in editable Word format
3. Safety Inspection Checklist – Roof and Ground-Mounted Mini-Grids in Word/Excel format
4. Safety Inspection Checklist – EV in Word/Excel format

Guidelines for Proposal

Taking account of the above, the Consultant should provide but not exclusively the following information:

a) Your profile detailing relevant experience in lithium battery safety
b) Track record of any assignments related to lithium battery safety of a similar nature and scope (battery safety guidance).
c) A clear outline of the methodology and approach for developing the Lithium-ion Battery Safety Guidance.
d) Proposed framework for aligning the guidance with industry best practices.
e) A detailed work plan, including key tasks, deliverables and estimated timelines.
f) A break-down of charges for **Step 1** including each deliverable; and for **Step 2** including each deliverable. The charges will reflect the use of generic information where applicable.
g) PIDG shall reserve the right to only proceed to **Step 2** on satisfaction with the delivery and quality of content of **Step 1**.
h) A capped fee quote (including all expenses and applicable taxes to a UK client) that meets the requirements above. A breakdown should show how the fee quote covers the Scope of Work, as applicable.

Should you wish to be considered for this request, please submit your proposal by **22 April 2025, 6pm (GMT+8)**. Proposals should be sent to the following email addresses:

- Colin Liu – colin.liu@pidg.org
- Andrew Chiang – andrew.chiang@pidg.org