

Request for Proposal:
**High-level Review of the End of Life of Photovoltaic (PV)
Infrastructure in Low- and Middle-Income Countries**

Summary

Engineering X is seeking an expert (individual or organisation) to conduct a high-level review of the end of life (EoL) of photovoltaic (PV) infrastructure, focused on the drivers of social and environmental harm in low- and middle-income countries (LMICs).

The study will identify key challenges and opportunities in ensuring safe and sustainable EoL management in LMICs, and provide:

- A. An externally published review of current challenges and opportunities to inform the sector.
- B. Internal recommendations for potential Engineering X action in this area.
- C. A stakeholder list of key individuals/organisations.

Key details

- Budget: Up to £20,000 (inclusive of VAT).
- Contract start: November 2025.
- Contract end: February 2026.
- Deadline for proposals: 8.00 am (BST), 20 October 2025.
- Interviews: Week commencing 27 October 2025.

As an Academy, we are committed to advancing diversity, equity and inclusion in the engineering profession and therefore proactively seek to procure services from diverse suppliers, expecting the project to reflect diverse perspectives, particularly from stakeholders in LMICs.

How to respond

Please submit your proposal, including:

- A summary of your relevant experience (max. 300 words or a 2-page CV)
- A sample of similar work
- A delivery plan (max. 500 words)
- An overview of project management and budget

Please submit your application to Vishak Dudhee, Senior Manager – Engineering X at Vishak.Dudhee@raeng.org.uk by 20 October 2025, 8.00 am.

1. Background

Global photovoltaic (PV) capacity is growing rapidly. While this growth is critical to meet energy transition targets, so far limited attention has been given to what happens when PV infrastructure reaches its end of life (EoL). This creates significant safety, environmental and social risks. Planning for circularity and EoL is required, especially in countries with larger off-grid or mini grid PV systems.

Engineering X, a growing collaboration founded by the Royal Academy of Engineering and Lloyd's Register Foundation, seeks to address neglected global challenges in safety and sustainability through collaborative, inclusive, and systems-based approaches. This project aligns with our mission to improve health and wellbeing, prioritise unheard voices, and promote internationally relevant, locally appropriate solutions.

This work is funded through the UK Department for Science, Innovation and Technology's International Science Partnerships Fund.

About the Royal Academy of Engineering

The Royal Academy of Engineering creates and leads a community of outstanding experts and innovators to engineer better lives. As a charity and a Fellowship, we deliver public benefit from excellence in engineering and technology and convene leading businesspeople, entrepreneurs, innovators and academics from every part of the profession. As a National Academy, we provide leadership for engineering and technology, and independent, expert advice to policymakers in the UK and beyond.

Diversity and Inclusion at the Academy

As an Academy, we are committed to advancing [diversity and inclusion in the engineering profession](#), and therefore proactively seek to procure services from diverse suppliers. We expect the project to be delivered in line with our values of inclusion and diversity and to the highest ethical standards. Diverse perspectives should be considered in the development of proposals and outputs should be inclusive. Please expect to be asked questions regarding your commitment to diversity and inclusion.

2. Purpose

To build an evidence base on challenges and opportunities for safer, more sustainable PV EoL management, and to recommend where Engineering X could add value.

3. Deliverables

- A. External review report: overview of PV EoL challenges and opportunities, published by Engineering X.
- B. Internal recommendations report: options for Engineering X involvement.
- C. Stakeholder list: key individuals/organisations, with introductions where relevant.

4. Objectives

- A. Provide a qualitative, high-level mapping of the PV end-of-life (EoL) system at global level, with a focus on the drivers of social and environmental harm in low- and middle-income countries. This should draw on technical, economic, political, legal/ethical and data/knowledge considerations where relevant but is not expected to deliver a quantitative systems model. The mapping should highlight priority challenges and opportunities, identify the most significant levers for action, and

indicate where an international network such as Engineering X could add value.

Undertake this mapping by:

- Engaging the Academy network facilitated by Engineering X.
 - Consulting a wide range of stakeholders, such as:
 - Researchers and technical experts.
 - Industry actors across the PV value chain (e.g. manufacturers, installers, recyclers, energy utilities).
 - NGOs and civil society groups working on sustainability, energy access, and waste management.
 - Policymakers at national level in priority countries.
 - Relevant international organisations (e.g. IEA, IRENA, UN bodies).
 - Note: Engineering X can support introductions to Academy Fellows, international partners, and relevant policy/industry contacts. Engagement with affected communities is not expected in this scoping commission, but should be considered through secondary sources and consultation with organisations already working on the ground.
 - Conducting desk research and horizon scanning of the existing evidence base.
- B. Identify and scope a small number of key focus areas for deeper analysis, bringing in other expertise where necessary (including through sub-contracting if appropriate).
- C. Recommend priority areas where Engineering X might contribute appropriately, taking into account feasibility, added value, and alignment with the Academy's mission.

5. Approach and methodology

The commissioned party will:

- Conduct desk research, interviews, and stakeholder consultations. *The supplier is expected to have links to experts in their network in at least 3 relevant countries and across at least 3 of the stakeholder groups identified above. Engineering X can support outreach to additional stakeholders.*
- Work closely with the Engineering X team throughout.
- Take a comprehensive, inclusive, and action-oriented approach – considering how the different parts of the PV end-of-life system interact and where the most important levers for change may be.
- Answer the review questions identified. Please refer to the *Annex* for draft questions to be answered for further discussion with the successful supplier.

6. Milestones and phasing

Scoping and Review (Nov 2025–Jan 2026):

- Produce a written overview of the global PV end-of-life system, with particular attention to LMIC contexts.
- Identify and analyse priority areas of focus (e.g. regions, technologies, or challenges with greatest environmental/social risk).
- Develop a stakeholder list (with introductions where relevant).
- Provide an internal recommendations report (options for Engineering X involvement) and an external scoping publication.

Final deliverables due: February 2026

- Draft external report (mid-Dec).
- Final internal + external reports (mid-Feb).

- Publication early March 2026.

7. Contract timeline

31 Oct: Appointment confirmed

10 Nov: Contract start

Mid-Dec: Draft report due

Mid-Feb: Final deliverables submitted

Feb: External report published

8. Budget / cost

A budget of maximum £20,000 inclusive of VAT is available for the work. Sub-contracting is permitted.

9. Submission requirements

Applicants should submit:

- Track record (max. 300 words / 2-page CV): evidence of relevant expertise and networks, including references.
- Samples of work: at least one example of similar work conducted such as reviews or reports.
- Delivery proposal (max. 500 words): approach, activities, and stakeholder engagement. Please explain how you intend to approach this commission and all activities that would be carried out. Please also include examples of stakeholders you would engage on this commission from at least 3 relevant countries and across 3 of the stakeholder groups listed.
- Project management and budget: proposed high level schedule, specification of whether applying as individual or group and roles, high level cost breakdown.

10. Procurement schedule

20 Oct: Deadline for submissions

22 Oct: Notification of shortlisted applicants

28–29 Oct: Interviews

31 Oct: Appointment

11. Assessment criteria

In selecting, we will take into account the following criteria:

Criteria	Details	Max points
Proposed content	Quality and appropriateness of the proposed approach and methodology	10
Track record	Track record of the proposed individual/team in delivering similar projects, including network strength and quality of references and samples provided	5
Project management	Suggested timescale for the project delivery and process	5
Cost	Overall value for money and appropriateness of the budget	5

12. Scoring

Written proposals will be scored by at least two members of the Academy, and the three highest scoring proposals as determined by the assessment criteria will be invited to an interview.

The interview panel will consider assessment criteria scores to give a weighted mark out of 25. The proposal with the highest total score will be awarded as the preferred supplier.

Scoring framework

Scores will be awarded as follows:

0	No answer / unacceptable response
1	Very poor response
2	Poor response
3	Acceptable response
4	Good response
5	Excellent response

ANNEX

Draft questions to be answered through the review for further discussion with the successful candidate:

- What does the PV EoL system look like?
 - What makes up the system?
 - Who are the key players, programmes, and initiatives?
 - What are the relevant technical, economic, social, political, environmental, supply chain, legal/ethical, and data/knowledge factors?
 - What are the factors already covered by others?
 - Which geographies are most affected by this issue?
 - Who are the groups of people most affected? What do they need? How do we know what they need? (i.e. data, assumptions, conversations)
 - What is the funding landscape around this? (What is government involvement? Is there a lot of money in this already? Are there big global players involved?)
- What are the key issues or gaps that require action?
 - What impact are they having on people, environment, safety etc.?
 - Who are they affecting?
 - How do they affect people in lower- and middle-income countries in particular?
 - What are the engineering related issues?
- What are the decisions on relevant focus areas? For example:
 - Focus on all PV infrastructure in LMICs vs focus only on the EoL of off-grid / standalone PV and/or mini grids in LMICs
 - Focus on a particular region or country in (e.g. on LMICs with large PV capacity such as India or Brazil)
 - Focus on full PV infrastructure including batteries vs focus on only PV panels
- How does this relate to Engineering X work?
 - What focus areas align with topics the Engineering X/the Academy is already working on?
 - Where could the Engineering X add most value? Where are there other actors who might be better placed to do the work?
 - What happens if Engineering X *doesn't* do any work?
 - Are there any potential unintended consequences of doing work in this space – negative or positive?
 - What happens if Engineering X does get involved and it goes wrong?
 - What kind of work / resource / capacity would be required to make a difference on an area.
 - Are there other reasons we should not get involved with particular areas?
 - Is the time right; how quickly is action required on a focus area?