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This document gives an **overview of the Engineering X **open burning grant call**. It contains important background information and context for why this grant call is needed. It includes the **scheme's objectives** and **key considerations** for applicants which will be used as part of the assessment criteria.**

Please ensure that you have read this document carefully before moving on to the specific application guidance for the two types of grants available. See page 7 for further details.



Grant overview

Engineering X is looking to fund projects that lead to the reduction of risk to human health and safety from the **open burning of waste**.

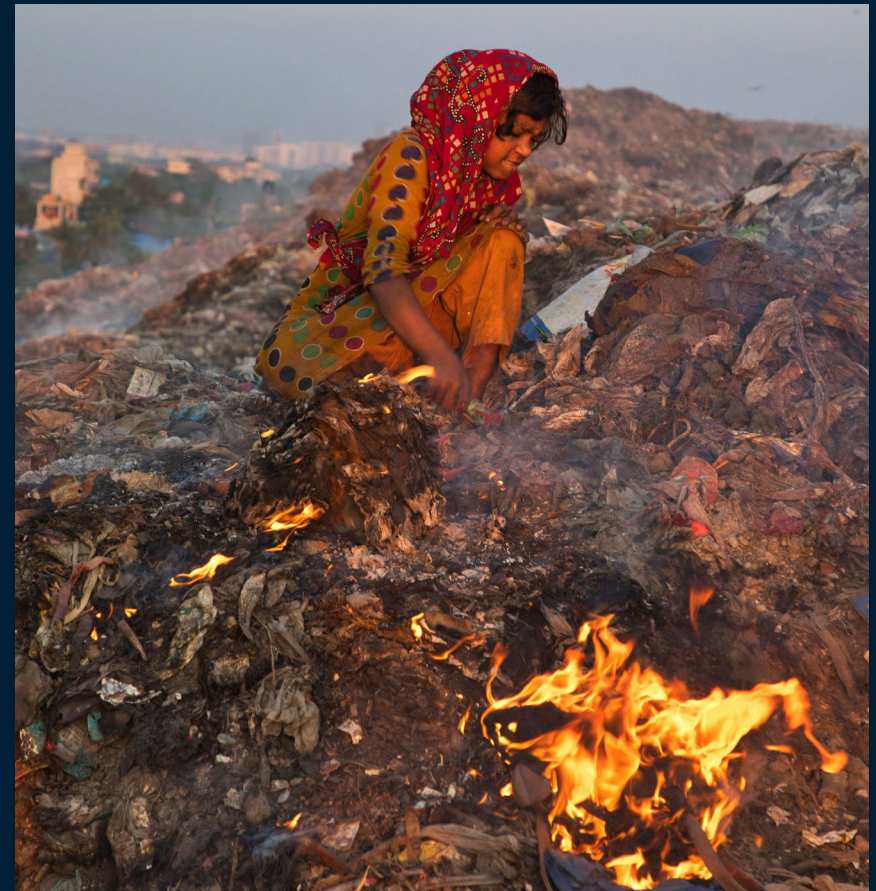
Grant scheme objectives

Overall intended impact

To reduce the risk to human health and safety from open burning of municipal solid waste for the vulnerable population groups in low- and middle-income countries

Objectives

- To raise awareness and broader understanding of the challenges and opportunities in the tackling of the open burning of municipal solid waste including any unintended consequences.
- To facilitate the development of evidence and use of evidence-based approaches to mitigate the impact of open burning of municipal solid waste on human health and safety.
- To increase knowledge sharing across region, cities and sectorial boundaries on effective implementation of phasing out of open burning of municipal solid waste.
- To decrease the practice of open burning of municipal solid waste through evidence-based approaches.



*Child sifting through dumpsite on fire in Bangladesh;
© Azim Khan Ronnie (2019).*

Grant scheme overview

There are **two types** of grant available:

1. Impact grants (up to £60,000)
2. Baseline study or awareness raising grants (up to £20,000)

The funding period for both grant types is up to 24 months.

Once you have read this overview document, **please read the specific application guidance** for the grant you would like to apply for.

All guidance documents can be found on the **Grants** tab on the 'Open burning of waste' page of [our website here](#).



Background

**Why open burning of
waste?**

The challenge: open burning of waste

The open burning of waste takes place worldwide, particularly in low- and middle-income countries where there is a lack of waste management infrastructure. It is poorly understood but it is a widespread practice with **catastrophic impact** on **health** and the **environment**.

Engineering X has been working in partnership to raise open burning on the global agenda and now wants to fund projects that can have impact, build evidence and raise awareness.



Students burn waste from their school in a barrel in Kwa-Muhia, Kenya; © WasteAid (2011).

Our journey

Evidence gathering

To inform the direction of our Safer End of Engineered Life mission, Engineering X commissioned the *Global Review on Safer End of Engineered Life* led by the University of Leeds to understand what happens to consumer goods and other engineered products at the end of their useful life. This research identified the harm caused by open burning and called for urgent action to tackle this neglected issue. The review identified the multiple and multidisciplinary nature of the risks posed to human health and the environment from the uncontrolled burning of waste. In particular, it identified risks to informal waste workers and vulnerable populations (for example, children, older people, pregnant women), as well as the risks posed through the pollution of land, air and water. Importantly, it also concluded that there are several (perceived) benefits of burning waste. For example, burning occurs to ‘get rid’ of accumulated waste or in the form of regular burning as an accepted practice. It is also an accepted practice in health emergencies and refugee and displacement camps. For the e-waste recyclers, burning the waste provides a ‘quick and easy’ method to access the enclosed metals. It is important, therefore, in addressing the risks that no unintended harm is caused.

Following this evidence gathering, we sought to raise the issue of open burning on the global agenda and catalyse action around this long-neglected issue.

Community Building

As a first step, we held two global workshops in January 2021, hosted by the Engineering X open burning theme leads, Dr Mansoor Ali and Dr Terry Tudor, and run in partnership with our partners the [International Solid Waste Association](#). These multidisciplinary, cross-sector events brought together 115 participants from more than 23 countries. The workshops aimed to contextualise and build upon the findings from the Global Review, as well as provide recommendations for the future of our work in this area. Participants identified that open burning was mainly due to poor waste management systems and inadequate disposal sites. The key drivers for change were noted as: improving waste management systems; providing training; enforcing legislation and initiatives; developing recycling initiatives; and raising safety standards. It was also recommended that the link between open burning of waste and climate change be emphasised as a way to move the issue higher up the global agenda. [Read more on workshop in the report here.](#)

The community has continued to build and share knowledge through an online Community of Practice. [Join us here.](#)

Our journey

Climate

To leverage the climate angle raised at the workshops, we formed a partnership with the [United Nations' High Level Climate Champions](#). Engineering X is now supporting Professor Desta Mebratu, Waste Lead, and Dr Andriannah Mbandi, Deputy Waste Lead, to build strategic partnerships and raise awareness at the highest levels on the challenges of and opportunities from tackling open burning of waste. In May 2022, they published *Open burning of waste in Africa: challenges and opportunities* and are now developing a call to action ahead of COP27, which aims to lead to a commitment for action. There have been several high-level side events, including UNEA 5.2, Sustainability Research and Innovation congress, Africa Climate Week and African Ministerial Conference on Environment. This builds on our [COP26 official UN side event](#) where Engineering X, in partnership with the International Solid Waste Association, the Climate and Clean Air Coalition (CCAC), The Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ), WasteAid, Emory University, and the Institute for Global Environmental Strategies (IGES) raised open burning at a high-level forum for the first time.

We hope that these grants around open burning will support higher level activity to show the action taking place at all levels to end this dangerous practice.

Health

While raising the effects of open burning on the climate agenda, the Engineering X Safer End of Engineered Life mission's key focus is to protect human health and improve safety. To this end, we are now launching the first-ever global grant scheme dedicated solely to tackling the health impacts of open burning of waste and improving safety. Through this grant scheme we are looking for partners to join us from around the world and raise awareness of this issue, build up and use evidence, and support direct impact initiatives that aim to phase out the open burning of waste. The grant scheme aims to catalyse further action beyond the grant period.

Open burning theme leads

Dr Terry Tudor

Dr Terry Tudor has over 20 years' international experience in the field of sustainable waste management, working at the community and organisational levels in developing countries. His expertise focuses on managing the risks associated with hazardous waste and behaviour change.



Dr Terry Tudor

Dr Mansoor Ali

Dr Mansoor Ali is an international development specialist with more than 35 years of experience in planning and assessing projects, designing programmes and research and the promoting of knowledge and learning with a focus on solid waste, sanitation and water. His main expertise is in waste management and recycling for low and middle income countries.



Dr Mansoor Ali

Useful resources

[Global review on Safer End of Engineered Life](#)

[Open burning of waste workshop participant report](#)

[COP26 side event recording](#)

[Open burning of waste: challenges and opportunities in Africa](#)

[Open burning of waste video](#)

[Community of practice](#)



Key considerations

Key considerations

This grant call is based on evidence from *the Global Review on Safer End of Engineered Life*, two global workshops, *The open burning in Africa: challenges and opportunities* report, and global scanning research that aimed to better understand the global context of tackling open waste burning. From this evidence, we have included the following key considerations for applicants to respond to so that the projects selected best address the current need. These considerations reflect Engineering X's values and ensure that funded projects have diversity and inclusion, sustainability and justice embedded.

- Health and safety
- Municipalities and cities
- Consideration of unintended consequences
- Building local capacity and effective and long-term partnerships
- Project sustainability
- Project team diversity
- Inclusion of unheard voices
- Innovation
- Sustainable Development Goals and Global frameworks

Applications must consider all these key considerations. Please note that while we have included a focus on municipalities and cities, applications can be submitted at any level of geographical area (i.e., national, regional, municipal).

Health and safety

This grant call is focused on human health and safety that is at risk because of the open burning of municipal solid waste. We recognise the harm to the environment and the subsequent risks of climate change to human life. However, to target this grant call, it will focus on the direct risks to human health and safety. This includes but is not limited to: the effect of emissions from open burning on human health; protecting livelihoods; and ensuring safe and fair labour environment for all waste sector workers and related stakeholders, especially the vulnerable groups.

Applications will need to demonstrate how the proposed project will have a direct impact on human health and safety.

Municipalities and cities

There are a limited number of national policies focused specifically on the open burning of waste and waste management practice is most commonly handled at the municipality or city level. Where there are policies in place they are often not implemented as governance structures do not have the capacity to operationalise these.

Applications are encouraged to focus on the policies, regulations and actions at the municipal/city level. We encourage projects to work with local governance structures that can improve local capacity and inform national policies in the future. However, the grant criteria are not limited to the municipal/city level, as the projects can also have a national/regional level focus if the context is suitable for this.

Consideration of unintended consequences

The complete and sudden end to open burning would threaten the livelihoods of thousands of informal waste management workers. Avoiding unintended consequences is a key recommendation from the *Global Review on Safer End of Engineered Life*. Any plan to phase out open burning needs to take a people-centred approach that considers the needs of informal workers who are already engaged in gathering, sorting and processing of waste.

Applications must demonstrate a people-centred approach that includes justice at its core. Most notably, distributive justice, participatory justice and recognitional justice. This is in line with the do no harm principle. This must include a stakeholder engagement plan that outlines the different stakeholders and how the local communities will be included at every stage of the project, including design, implementation and dissemination of findings. Applicants are expected to identify, monitor and mitigate any unintended consequences.

Building local capacity and effective partnerships

This is the first grant scheme dedicated solely to open waste burning and it aims to catalyse further action from larger organisations and policymakers to effectively manage the open burning of waste. To ensure this, it is essential to build local capacity and effective partnerships. A key element of effective partnerships is the inclusion of unheard and marginalised voices as well as partnerships with the relevant local governance structures.

Applications must demonstrate the partnerships already in place and, if there are not already existing partnerships in place with the relevant stakeholders, the application will need to outline a plan for building the necessary partnerships.

If there is a particular stakeholder that you are interested in partnering with, but you do not have a direct contact, please get in touch with the Engineering X team to see if we can assist with a connection through our networks.

Project sustainability

To ensure lasting impact as intended is achieved, applications must outline how their project will be sustainable beyond the grant period. This can be done through various methods but might include leveraging further funding or building lasting partnerships to effect change.

Project team diversity

Successful applications will have evidence of consultation, co-creation and diverse leadership at all stages of project development including, initiation, planning and monitoring. This engagement will be sustained for the duration of the project.

We are committed to diversity and inclusion, creating cultures in which everyone can thrive, and seeking diverse perspectives to enrich our collective performance. We know that women and girls and marginalised groups, in particular, can be unintentionally excluded or overlooked unless specific attention is paid to their voices. Depending on the context, groups may also be marginalised due to ethnicity, religion, class, disability, geography or socioeconomic status, to name but a few examples. Take this into consideration when establishing the project team and defining roles and contributions.

Inclusion of unheard voices

We want to ensure that the planned activities, expected outcomes and set objectives are equitable and benefit marginalised groups. This does not mean that your project needs to aim to reduce inequality directly. However, if you intend to create social impact, it is important to be specific about the diversity of the groups your project targets and how they will be included throughout the project and beyond. Take care to consider the different needs and interests of women and girls, men and boys, and underrepresented groups who are part of the project's target population or indirectly affected by the project's activities and outcomes.

Projects to increase inclusion for one group will often affect other underrepresented groups. However, the greater your understanding of a particular group's unique needs, the more targeted and effective your project is likely to be. Under this consideration you should define which groups you are targeting, why and how the project will ensure their inclusion.

Innovation

The proposed project will need to outline a degree of innovation. The definition of innovation in this sense is broad and can feature examples such as innovative data collection, new partnerships or creative and original thinking. If you are not sure, then please get in touch with the Engineering X team.

Sustainable Development Goals and global frameworks

Applicants will need to demonstrate an understanding of global frameworks that apply to the proposed project and embed international principles in their work. This is to demonstrate good practice and how the project can be scaled.

Country focus

This call is open to organisations from any country; however, the focus country/municipality must be a in a lower- or middle-income country where there is evidence that open burning is prevalent. If the lead applicant is based outside of the country of focus, the relevant in-country partners will need to be demonstrated in the project team.

Partnership

There is no requirement for matched funding for this call. If as an organisation you would like to bring additional funds to undertake a larger project, please include this or if you have an idea to generate larger funds or partnerships on open burning of waste, please get in touch with Hazel Ingham, Senior Manager, Engineering X at hazel.ingham@raeng.org.uk.



Who we are

Who we are

Engineering X is an international collaboration founded by the Royal Academy of Engineering and Lloyd's Register Foundation that brings together some of the world's leading problem-solvers to address the great challenges of our age. Our global network of expert engineers in academia and industry are working in partnership with leaders in business, government and civil society to share knowledge and best practice, explore new approaches and technologies, and educate and train the next generation of engineers to improve safety and deliver impact.

The Engineering X community brings together partners from around the world, building on a network of global alliances to tackle the most pressing safety and sustainability challenges, and developing practical and inclusive solutions for the engineering profession worldwide. Find more information about Engineering X and its' other Missions on [our website](#).

The Royal Academy of Engineering is harnessing the power of engineering to build a sustainable society and an inclusive economy that works for everyone. In collaboration with our Fellows and partners, we're growing talent and developing skills for the future, driving innovation and building global partnerships, and influencing policy and engaging the public.

Together we're working to tackle the greatest challenges of our age.

Lloyd's Register Foundation is an independent global charity that helps to protect life and property at sea, on land, and in the air.

The Foundation has partnered with the Academy to build on the Academy's network of global alliances to tackle the most pressing engineering safety and sustainability problems and develop these into practical and accessible outputs for the engineering profession and affected communities.

Who we are

Safer End of Engineered Life mission

The decommissioning, dismantling and disposal of products and structures at the end of their life can damage the environment and squander scarce resources if not carried out responsibly. These processes can also be dangerous and harmful, especially as the waste and processes in question are often displaced to parts of the world least able to manage them safely.

The **Engineering X Safer End of Engineered Life mission** seeks to address these challenges and improve safety globally by: understanding and applying practical interventions; building diverse international communities to share evidence, knowledge, and good practice; and raising awareness and a broader understanding of the global challenges of dealing safely and ethically with the billions of tonnes of end-of-life materials, artefacts and structures that humanity produces each year.

We believe when anything is built, the end of life must be planned to prevent harm to human health and the environment. From medical devices to e-waste to plastic to wind turbines and we have work strands around these various challenges, including open burning of waste.



Medical waste is co-disposed with municipal solid waste on a dumpsite in Malawi; © WasteAid (2020).

**Thank you for your
interest in the
open burning of
waste grant call.**

**For any questions or queries
please contact:**

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**Bringing global
experts together
to engineer
change**

