Burning of Waste Workshop 1: Background Paper

Overview

The uncontrolled burning of waste takes place worldwide, particularly in low- and middle-income countries where there is a lack of waste management infrastructure. The evidence around the prevalence of this issue and its harmful effects are poor. A recently completed Global Review on Safer End of Engineered Life by the University of Leeds and partners identified open burning as a dangerous issue that needs urgent attention globally.

The Engineering X Safer End of Engineered Life programme seeks to raise this issue on the global agenda, beginning by convening a free, multi-disciplinary workshop of diverse stakeholders. In this interactive workshop delivered in partnership with the International Solid Waste Association, Participants will work in focused breakout groups to validate the findings of the Global Review, share their experiences of the issue and contribute recommendations for future funding programmes.

We hope this workshop will act as starting points for action around this global challenge and facilitate the creation of a community working to address it.

Background

Uncontrolled burning is often the result of poor waste management systems and usually takes place in many low- and middle-income countries. Waste is burnt in residential areas and within industrial or commercial premises due to the lack of availability, the unreliability, or sometimes the complete absence of a waste collection and disposal systems. The Global Review concluded that “ending the practice could result in a requirement to treat and dispose of close to a billion tonnes of solid waste worldwide.” Highly engineered final disposal options such as landfills require large investment and are, therefore, beyond the budgets of many cities and regions, particularly in in low- and middle-income countries.

The practice can lead to a number of public and environmental health concerns. For example, direct health impact on E-waste recyclers, those working in factories and those waste workers who burn materials to reduce waste and those who burn to extract metals. In addition, these E-wastes contain hazardous materials such as lead and arsenic. There are also risks posed to the communities where the waste is burnt, especially to the most vulnerable segments of the communities such as children, the elderly, pregnant women, and those with co-morbidities. The waste can also directly lead to contamination of the land and water (i.e. surface and ground water).

The Review concluded that, at the same time, there are a number of (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. The burning or partial controlled burning of waste is also an accepted practice in health emergencies and refugees/displacement camps. For the E-waste recyclers, burning the waste provides a ‘quick and easy’ method to access the enclosed metals.

Given the complexity of the issues around the burning of waste, developing strategies to effectively understand and address the issues requires a multi-disciplinary approach. The Global Review, which was conducted through the lens of a hazard-receptor pathway, serves to inform future programme to develop this approach. The Engineering X Safer End of Engineered Life programme would like to develop an impactful programme to address the global challenge of un-controlled burning and calls for others to join this mission.

Workshop 1

To validate the findings of the Global Review and to develop a programme of future positive impact, Engineering X in partnership with ISWA will be hosting a free, online, global workshop on **Thursday 14th January 2021**. This workshop will be run twice to accommodate more global participation. Participants can choose from **10.00am - midday GMT** or **2.00pm - 4.00pm GMT** (40 participants per session).

Participation is welcome from all stakeholders; from practitioners, policymakers, those working within the community, industry, academia, and those who simply wish to positively contribute. We especially welcome participants from developing countries, young professionals, women, and other under-represented groups.

If you are interested in attending, please submit an expression of interest via the Academy website **by 18th December 2020.** Workshop participants will be notified week beginning 4th January 2021 of their selection.

A second workshop will take place on 21st January 2021 to build on the findings of this first workshop and develop potential programmes.

Purpose

This workshop seeks to understand the nature of the practice of burning waste from the perspective of the key stakeholders who are involved and to receive recommendation regarding the nature of the future programme. Participants will validate and contribute to the key findings from the Global Review which identified a number of key issues and also proposed several recommendations. There is, however, a need to further tease out some of the issues raised. For example, while the Review flagged the variation in the open burning hotspots, there is a need for a greater understanding of factors such as poor disposal practices; limitations in collection of both municipal and commercial and industrial waste; and the informal recycling sector on the prevalence of these hotspots.

We also hope that these workshops will act as starting points for global action around this issue and facilitate the creation of a community working to address it.

Context & Partners

We are aiming to ultimately develop options for addressing the key issues around the burning of waste. For example, how do we best protect the livelihoods and the lives of stakeholders and their communities who are burning waste? How do we best assess the issue of opening burning to enable regular monitoring? What governance structures are required? How best might be

engage/communicate with a range of stakeholders, particularly those who are 'on the ground'? We are aiming to build a community of practice that will bring together the perspectives and actions of stakeholders not only from around the world, but also from a range of disciplines. Ultimately, our aim is to develop a community of practitioners, academics, policy makers and related stakeholders to develop holistic, strategic approaches to addressing the issues surrounding the global burning of waste.

Background

Global Review on Safer End of Engineered Life

On behalf of Engineering X, the University of Leeds led by Dr Costas Velis with partners the International Solid Waste Association (ISWA), D-Waste, and Independent Safety Services Limited (ISSL), carried out a Global Review on Safer End of Engineered Life. This review looked at categories of engineered materials and the safety of associated disposal and decommissioning practices. The thematic areas of plastic, construction and demolition, medical, electronic waste and land disposal were examined. The research identified the immense harm caused by burning of waste worldwide, particularly in low- and middle-income countries, and the scale of the issue.

The Global Review will be published on **Monday 14th December 2020** and shared with all workshop applicants.

Engineering X

Engineering X is a new 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, academics and business leaders are working in partnership to share best practice, explore new technologies, educate, and train the next generation of engineers, build capacity, improve safety and deliver impact.

International Solid Waste Association Partnership

The International Solid Waste Association (ISWA) is an international network of waste professionals and experts from around the world whose mission is to promote and develop sustainable and professional waste management worldwide.

Engineering X is delighted to partner with ISWA on this important work that seeks to bring much needed attention to the urgent issue of burning of waste. Through this partnership and workshop, we hope together to raise the profile of this issue and facilitate the creation of a global community of practice, incorporating the impressive ISWA membership network, around the burning of waste worldwide.

Contact

If you have any questions or would like more information, please contact **Hazel Ingham, Safer End of Engineered Life Programme Manager** at hazel.ingham@raeng.org.uk.