Digital Solutions for Front-line Waste-management Workers

CONTEXT

India currently produces nearly 62 million tons of waste per year, and the country's continued urbanization will only increase this rate. The sheer volume alone poses serious environmental and public-health challenges for the country in every facet of waste management: collection, sorting, transportation, treatment and disposal. In many cities, municipal solid waste (MSW) contains human and animal excrement as well as hazardous chemicals and sharp objects. Disease and injury are unavoidable occupational hazards for lower-level workers in waste-management sector, who sometimes are children.

Yet MSW has intrinsic value—particularly in a "circular economy" that fosters the reuse of resources. Its value, however, depends on how well it is collected and segregated. For that reason, a successful waste-management business depends on the health and safety of the front-line workers who are directly involved in the collection and segregation processes. Increasing the efficiency with which they execute their jobs also helps to improve the quality of their lives, since this potentially increases the economic return of their labour.

We believe that digitalization has the potential to improve the lives of millions of front-line workers in waste management in India by simultaneously addressing health, safety and efficiency. If hazardous material can be identified at the lower collection and aggregation levels, contamination risk can be reduced in the subsequent steps of the value chain. The data gathered at these levels can also help identify value-adding opportunities and nurture the growth of a circular economy.

We therefore seek proposals from companies that can apply digital technology, including artificial intelligence (AI), to help significantly improve the quality of life of front-line waste-management workers, with a particular focus on:

- Increasing their occupational safety
- Improving their long-term health and their well-being
- Increasing their operational efficiency and hence their economic development

Note: The companies submitting proposals must be based in India or at least have an intention to open business operations in India.

WHAT WE ARE LOOKING FOR

- Digital technologies, services or systems designed to improve the quality of life of on-the-ground personnel associated with waste management
- Digital platforms to capture and manage data and derive useful insights from them
- Digital technologies, services or systems for segregating, sorting and generally managing MSW at the scale characteristic of small-to-medium Indian cities
- Digital platforms that integrate the different links of the waste-management value chain
- AI-based detection of hazardous waste.

IN SCOPE

- Digital and AI technologies for the scavenging, collection, sorting and segregation of municipal solid waste (MSW), including mixed plastic
- Low-cost, handheld or body-mounted devices for the early detection of hazards during sorting and segregation of MSW
- Monitoring or mitigation of the environmental or social impact of MSW

OUT OF SCOPE

- Proposals on policies & regulations
- New business models
- Industrial wastes
- Mechanical recycling

HOW TO SUBMIT YOUR PROPOSAL

- Go to the GameChanger submission form (shell.com → Energy and innovation → Innovating together → Share your Solution)
- In the field "Is this application in response to an ongoing Call for Solutions?", type "Waste Management"
- Fill in the other fields of the online form
- Submit your proposal by: **5ᵗʰ December 2020**
- Any information submitted as part of the process must be NON-CONFIDENTIAL at this stage
- For questions contact GameChanger-Solutions@shell.com

WE CONSIDER THE FOLLOWING CRITERIA IN THE SELECTION PROCESS:

1. Novelty: Is your solution fundamentally different than what is available now and unproven?

2. Value: How much would someone be willing to pay for your solution if it works?

3. Feasibility: Can the underlying concept be proven quickly and affordably? Is the right team in place to deliver this?

4. Relevance: Does your solution truly answer this call for solutions?

THE WINNERS

The company with the top proposal will receive between USD 15,000 – 25,000 to progress a "proof of concept" in a phased approach over a period of no more than 12 months. Two runner-up companies will also be named; they will receive mentoring from GameChanger. Further development and/or funding may be supported by Shell depending on the individual companies' progress.