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CYLINDER PRIZE NEWSFLASH

Within the UK Aid-funded Ideas to Impact programme, GVEP International and IMC Worldwide have been working in sub-Saharan Africa exploring ways to support increased LPG access. As part of this work, we ran an incentive prize looking for high value alternative uses for substandard LPG cylinders when they are withdrawn from circulation.

WHO ENTERED?

The "cylinder prize" attracted a lot of interest, with more than 180 solvers from 40 countries proposing solutions.

Among all those proposals, seven solvers got an award for five different ideas. The winning proposals are detailed in this document.

180
Solvers

40
Countries

7
Award Winners

5
Winning Ideas

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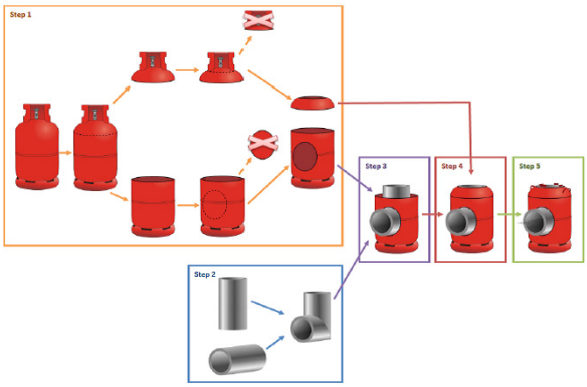
WHAT IS THE WINNING INNOVATION?

The idea of turning substandard cylinders into improved cookstoves was presented by an important number of solvers and was selected as the winning innovation by the judges.

HOW CAN WE DO THAT?

Each solver presented their particular set of activities and material requirements in order to turn the cylinders into improved cookstoves. Below is one of them. It shows the simplicity of the process provided the cylinder has been previously degassed by a specialist (a fundamental step to prevent any safety issue as cylinders can be highly dangerous):



WHAT IS THE VALUE?

According to the solvers, in a country the size of Ghana, the solution would bring huge value to a variety of development indicators.

- Social: between 1.5 and 2.5 million households given access to cheap clean cooking technology and around 1,500 jobs created in stove manufacturing and distribution.
- Environment: between 30%-50% decrease of fuel consumption in comparison with open fires which would minimize forest lost, reduce black carbon and PM emissions and would result in better health outcomes for users.
- Economic: up to $1.5 million profit after 5 years

WHO WON?

Three solvers won part of the prize award for submitting that idea. Each submission presented some particularities which makes the solution unique and complementary to the others either because of a technical innovation or because the business model was innovative. Each prize winner is quoted below;

"When we extrapolated these values to 2.5 million households (estimated stoves from cylinders), who will have access to our solution, we found there are significant value creation in almost all angles e.g. health, social, economic and environmental",

- Shikha Sharma, award winner

"Transforming an LPG cylinder into a rocket stove is rather easy. All cylinders can be transformed. Benefits include drastic improvement of public health, social impact on education, huge money savings for the families, and thousands of job creations.",

- MCA ingénierie, award winner

"The market for efficient, cleaner cooking technology is immense",

- Michael Mackey, award winner

"We recieved a huge number of high quality entries that went way beyond our expectations"

Mathieu Dale
Prize Manager, GVEP International

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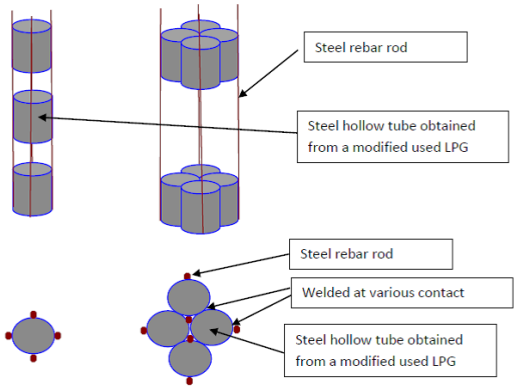
OTHER AWARDED INNOVATIONS

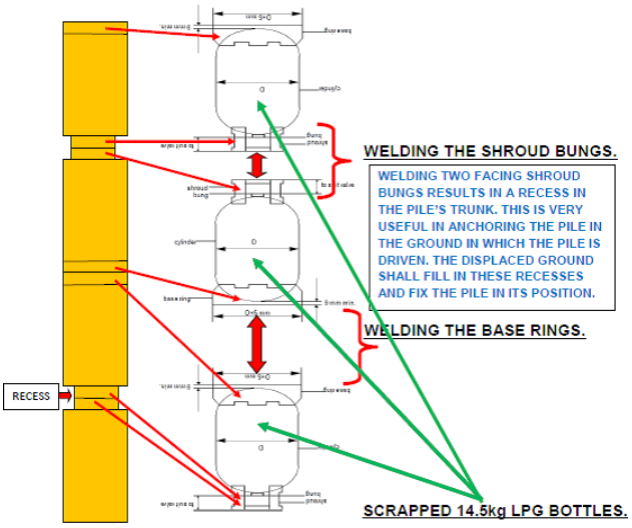
Substitutes of steel rebars in reinforced concrete

This solution repurposes the substandard LPG cylinders as partial substitutes of the steel bars used in the fabrication of steel reinforcements for reinforced concrete. For that use, the cylinder will be first modified by removing the top and bottom of the cylinder, converting it into a short tube which can then be filled with concrete, and soldered to other tubes and steel rods to form a strong concrete-reinforcing structure to be used in building construction.

"Turning our residues into valuable resources is the best way to reduce the environmental footprint we leave.",

- David José Espinosa Duran, award winner





Pile Foundations

Pile foundations use piles which are long members of wood, steel or concrete that can be driven into the ground to support structures built on top of them. The above diagram illustrates this innovation.

"Perhaps, the most important attribute of these scrapped bottles is its almost perfect and robust cylindrical sections..."

- Georges Abousaif, award winner

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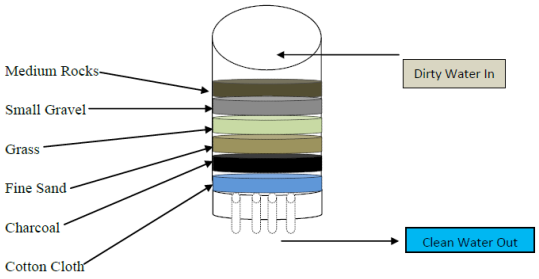
OTHER AWARDED INNOVATIONS

Water filtration & purification system

Substandard LPG cylinders are converted into a water filtration & purification system[1] that uses local materials, is reusable, and scalable and provides clean water suitable for human consumption.

"The abundant need for clean water, especially in remote rural areas, is the motivation for this water filtration and purification system proposal",

- Fran Orzech, award winner



Low cost absorption refrigerator

The lack of reliable electricity impedes the conservation of food for long periods causing wastage or serious health risks. Therefore, the means for food conservation are critical and represent a massive effect on economies as well as an improvement of public health and food accessibility. This proposed solution develops a new design of absorption refrigerator which can be build using the substandard gas cylinders and that should allow increased cooling capacities.

"A low cost absorption refrigerator can solve the critical problem of food spoilage, which resolution could bring a chain effect in many aspects of a society such as health, life expectancy, families' incomes, education and gender equality",

- Eric Herrero, award winner

MORE INFORMATION

If you would like anymore information about any of the winning ideas or the wider Ideas to Impact programme, please contact;

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[1] Irregular (non-repeatable) separation of cylinder halves is mandatory for the solution to be developed and supported in order to ensure that they are not turned back into LPG cylinders.