

# Self-Powered Exhaust Filtration System



## Mechanical Squad

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### The Problem:

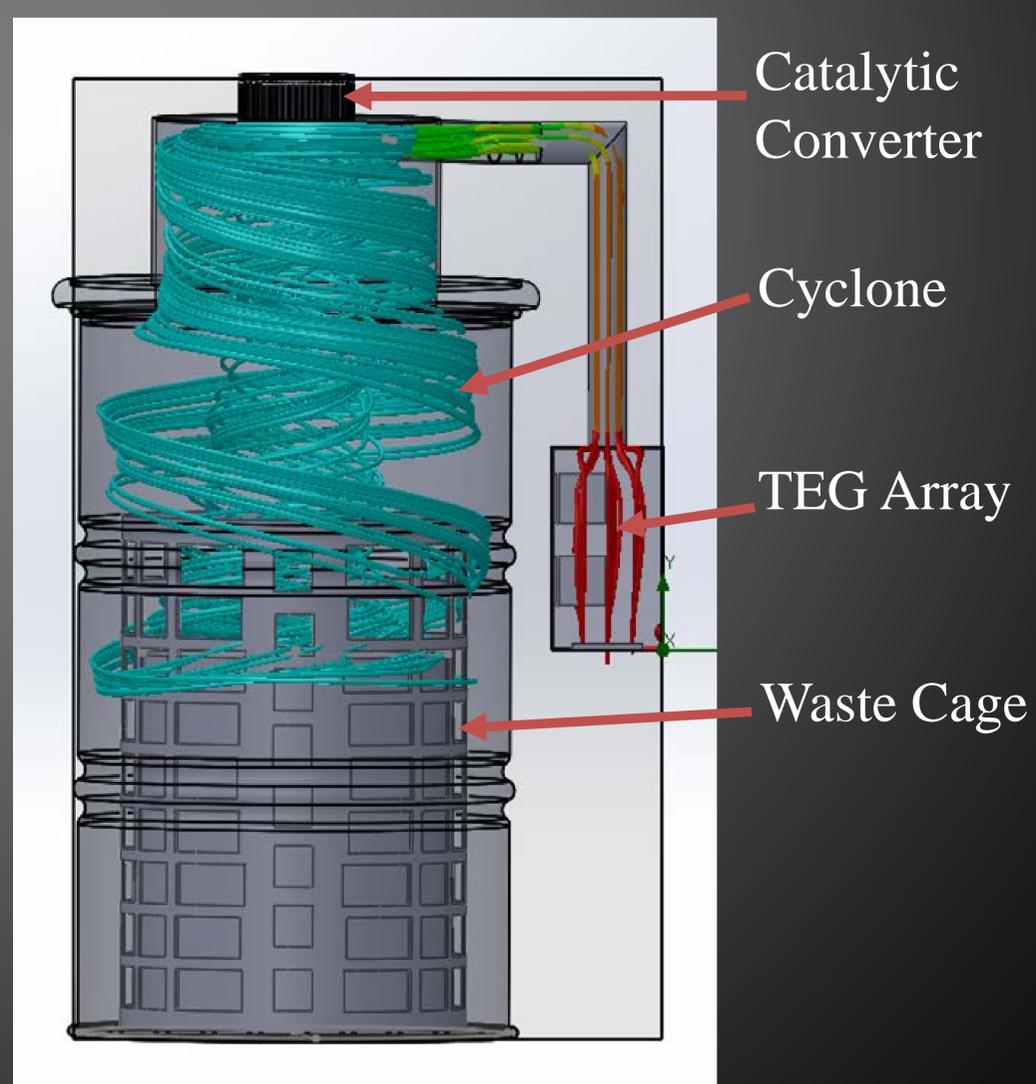
Open pit burning in 55 gallon drums is the most common practice of waste management in developing countries, subjecting locals to harmful toxins.

### The Consequences:

According to the WHO, about 12.6 million people die annually as a result of an unhealthy environment caused by air pollution.

### Our Solution:

The Self-Powered Exhaust Filtration System (SPEFS) attaches to the top of a 55 gallon drum and contains a two step filtration system to remove particles and toxic pollutants from the exhaust. The filtration system requires a fan which will be powered by the temperature differential produced by the system.



### Design Objectives:

1. Reduce air born toxins produced during burning of waste
2. Produce power from the temperature difference
3. Reliable and maintainable design
4. Operate at temperatures for clean combustion of waste

By using the SPEFS during waste incineration, trash will be reduced in developing countries and the quality of life will improve.