

# COLLECT - CONVERT - CONTRIBUTE



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# THE START OF A CHAPTER



# WASTE OIL



A total of 13 Million vehicles registered as of 2022 that uses engine oil. ( Land Transportation Office )

# Problem Statement

## SDG 7 : Affordable and Clean Energy



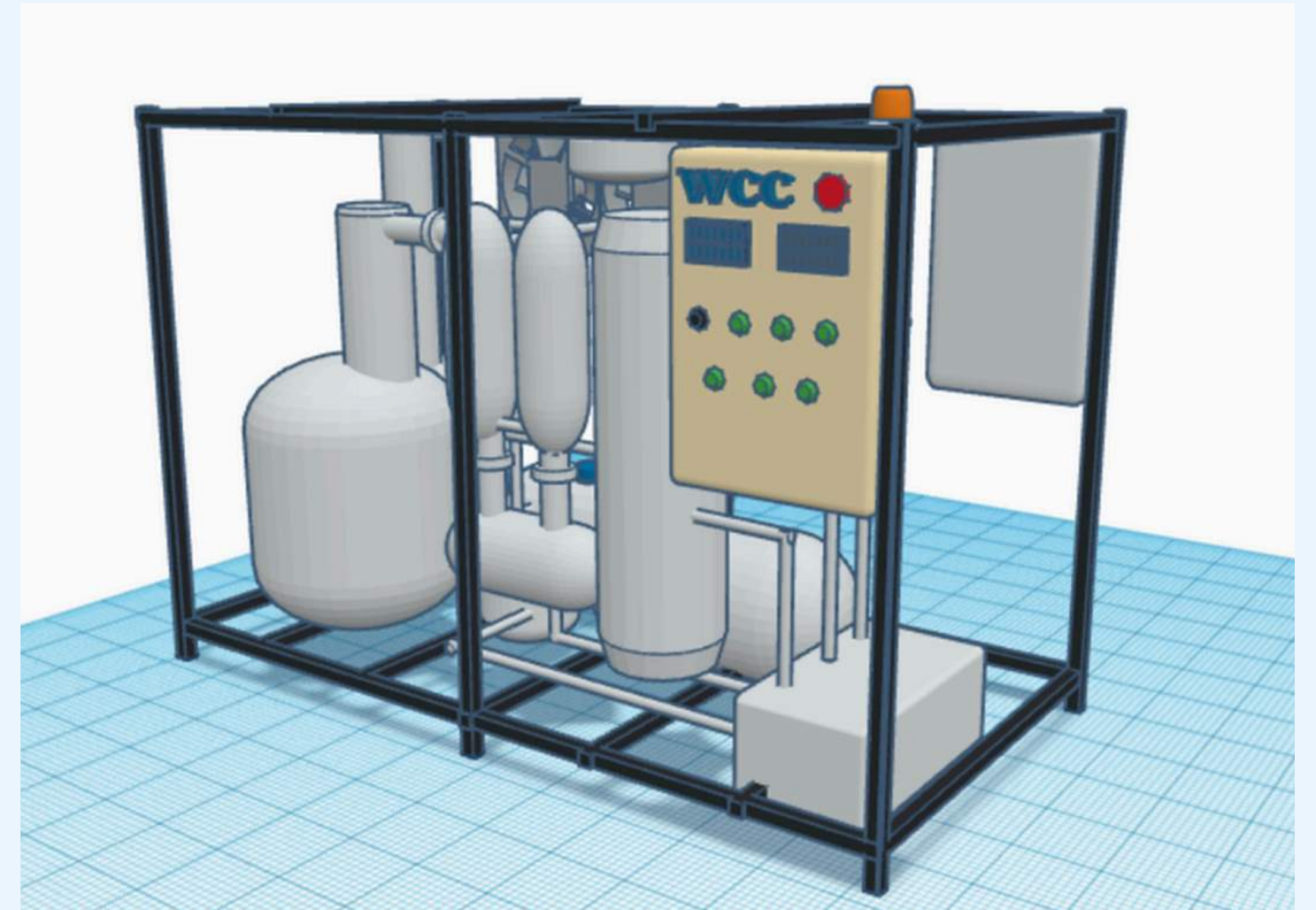
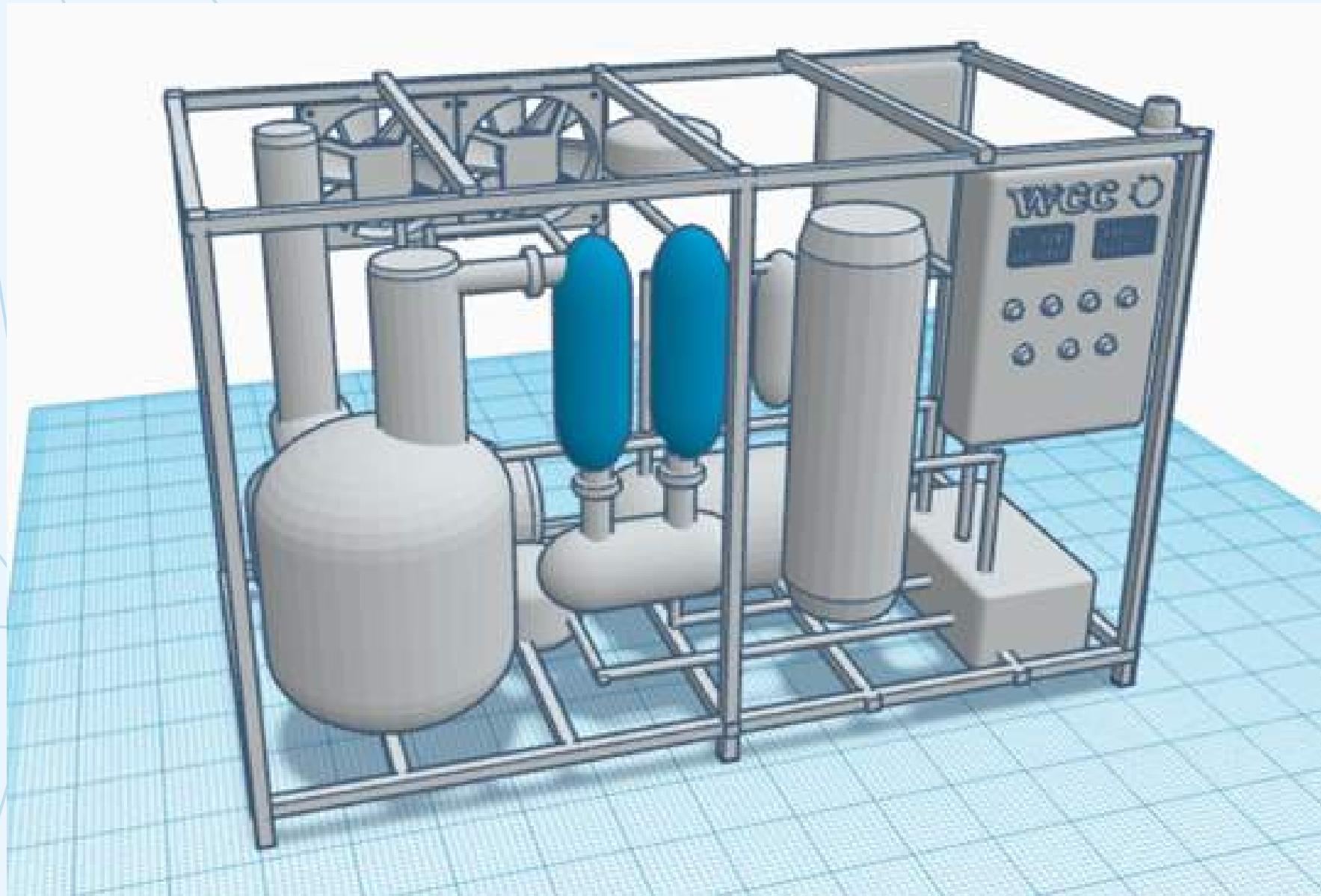
What is the first thing that comes to mind when someone asked you about clean energy?

We often turn a blind eye to affordable and sustainable sources of fuel.



# EXERGY

TURNING WASTE OIL TO DIESEL FUEL



EXERGY is a portable machine that converts used engine oil to industrial grade diesel fuel.

# EXERGY



# ► MACHINE FEATURES



**PRODUCTION RATE**

27 Liters per Hour

**POWER CONSUMPTION**

600watts



**CONVERSION RATIO**

80%

# Financial Breakdown

## Research and Machine Development



**P110,000**

## Operational Cost



Electricity : P10/Hour  
Employee (1) : P88/Hour  
Additional Consumable  
Cost ( I.e. Filters ) : P23/Hour

## Waste Oil Cost



**P1,500 / 200 Liters**



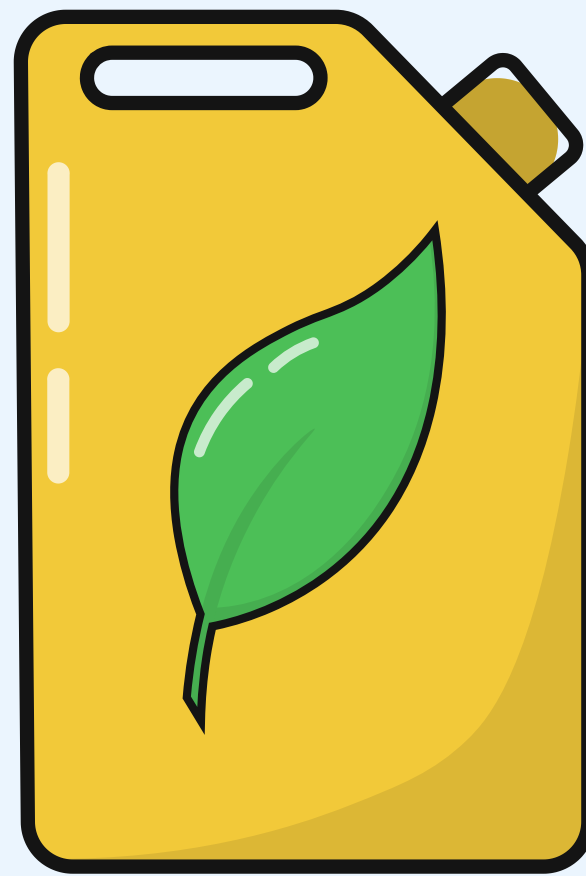
# ▣ Financial Analysis

**Total Operational Cost**



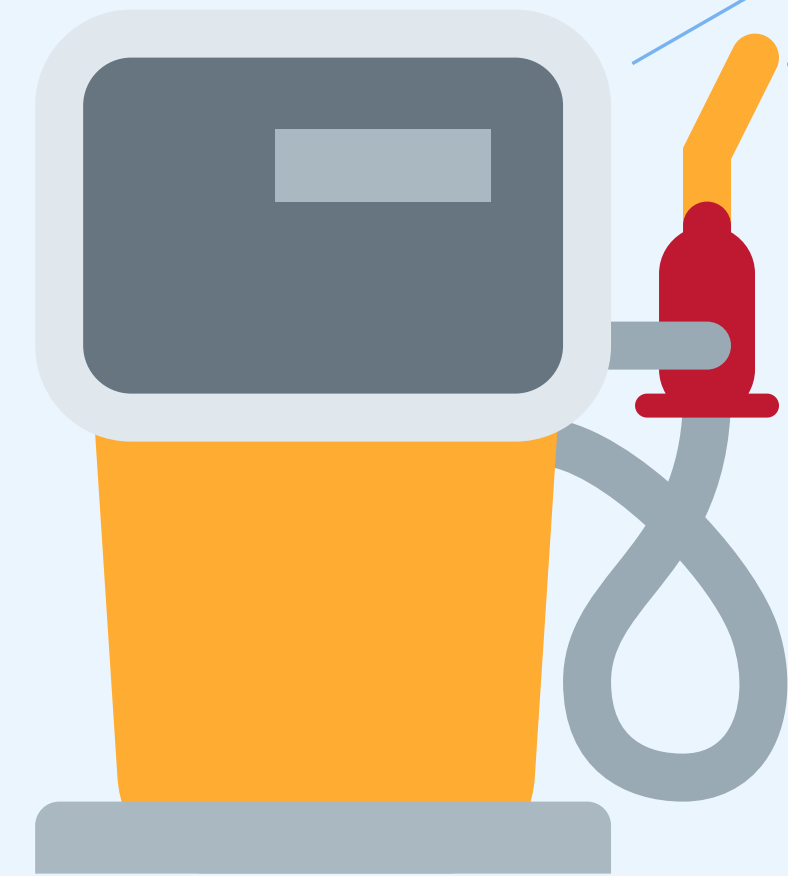
**P376 / Hour**

**Exergy Diesel**



**P14 / Liter**

**Outside Diesel**



**P60 / Liter**

# Fuel Performance

## Testing Platform



## Test Results



REPUBLIC OF THE PHILIPPINES  
DEPARTMENT OF SCIENCE AND TECHNOLOGY

INDUSTRIAL TECHNOLOGY DEVELOPMENT INSTITUTE  
STANDARDS AND TESTING DIVISION



A Member of DOST OneLab  
**OneLab**  
One Laboratory. Worldwide

### TEST REPORT ITDI-062024-OCS-0424

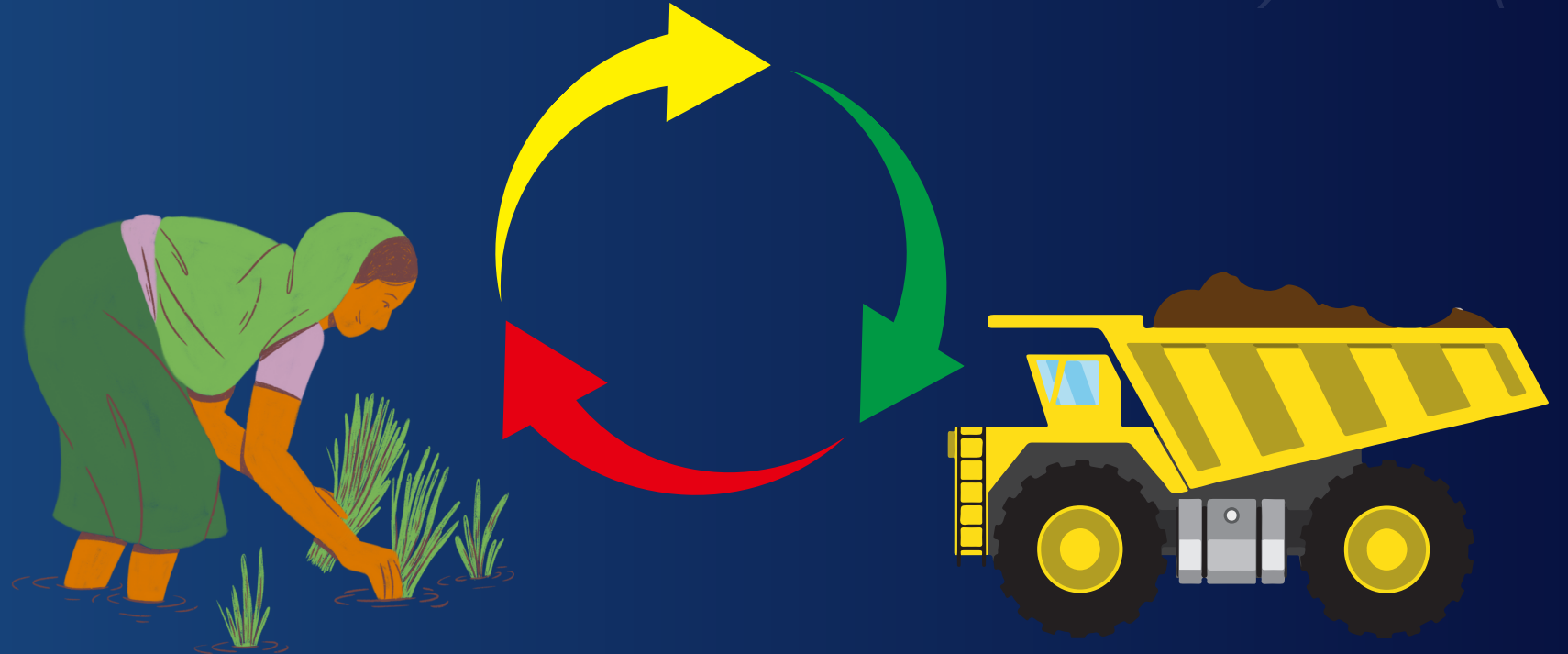
Customer's Name : *Jethro G. Goroz*  
Address : *#091 Zone 4, Sto. Domingo San Manuel, Tarlac*  
Contact Detail(s) : Mobile no. *0927.482.3913*  
Email: *Jethro.gorozal6@gmail.com*  
Date of Transaction : *June 13, 2024*  
Sample Code : *OCS-2024-0718*  
Sample : *Alternative Diesel Fuel*  
Description & Identification : *About 1.5 liter of reddish-brown liquid in a PET bottle with screw cap, unmarked*  
Date Received : *June 13, 2024*  
Date(s) Tested : *July 02 - 15, 2024*

Test Parameter, Unit	Result	Test Method
Heating Value, BTU/lb	19113	ASTM D240 <sup>a</sup>
Sulfur, % w/w	0.042	ASTM D1552 <sup>b</sup>
Copper Corrosion Test at 50 °C for 3 hours	1a <sup>*</sup>	ASTM D130 <sup>c</sup>

# IMPACTS

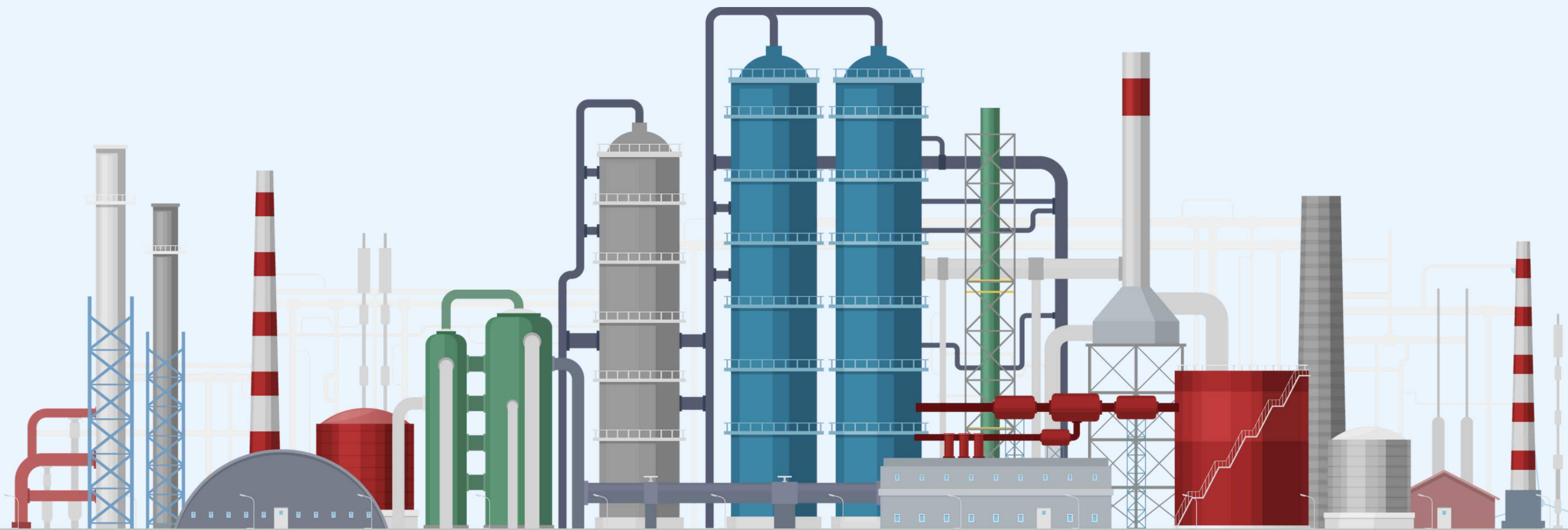


**Economic**



**Community**

# MAKE A CHANGE



THANK YOU!

