HOT TOPICS: PLASTICS AND THE CLIMATE

A SEATIZEN'S GUIDE TO PLASTICS AND CLIMATE CHANGE

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HMM. WHAT ABOUT PLASTIC THIS TIME?

Let's start from the beginning.

Most plastics begin as fossil fuels -- the extraction and manufacture of which is extremely greenhouse gas emissions-intensive.

The emissions stemming from the plastic industry are skyrocketing: the projected growth rate is 17-20% every year for the next 35 years.

Source: Center for International Environmental Law, World Wide Fund For Nature Australia, Sarah-Jeanne Royer et al. "Production of methane and ethylene from plastic in the environment"

WHOA. WHERE ARE THESE EMISSIONS COMING FROM?

The extraction of fossil fuels is done through fracking or drilling deep into the ground and using complex chemical liquids to pressure a rock into breaking.

Fracking is a highly controversial process that:

- Requires large quantities of water to execute
- Produces TONS of emissions
- Is likely to leave behind wastewater residue and other toxic chemicals deep in the soil, which disrupts the flourishing of plants and other land lifeforms.

Source: Center for International Environmental Law, World Wide Fund For Nature Australia, Sarah-Jeanne Royer et al. "Production of methane and ethylene from plastic in the environment"

WHAT DOES THIS MEAN?

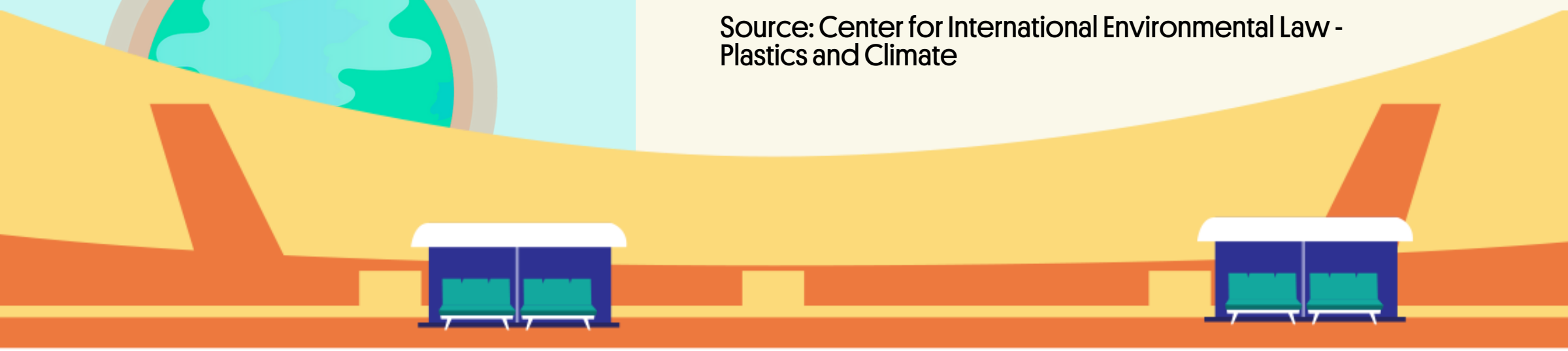
More emissions
=
more greenhouse gases in our atmosphere
=
More heat is retained in the atmosphere

This means that a total estimated emissions cost: 108 million metric tons (or 108 billion liters) worth of CO_2 globally per year.

For scale, the amount of CO_2 can fill 43.2 Olympic swimming pools.

Drastic spikes in global temperature also results in extreme weather conditions, ecosystem disruption, and food chain and human habitat disruption (like drought, famine, flooding).

Source: Center for International Environmental Law - Plastics and Climate



Just one entire Olympic-sized swimming pool contains 2.5 million liters of water.

WHAT ARE THE ISSUES CONNECTED TO OUR RELIANCE ON PLASTICS?

Improper waste management and disposal

There are three primary ways by which plastic is primarily disposed of: landfills, recycling plants, or incineration.

For now, only about 9% of all plastic is recycled.

Incinerating plastic emits 50 million metric tons of CO_2 into the atmosphere every year in the US and Europe alone.

DYK: The Philippine Clean Air Act of 1999 contains language that can be interpreted as banning incineration. This has been challenged in the Philippine Congress and by various organizations.

Source: Center for International Environmental law, "Plastics and Climate", National Geographic , "Here's How Much Plastic Trash Is Littering The Earth"

WHAT ABOUT LANDFILLS?

Landfills are the most common destinations for disposal, accounting for 79% of all global plastic waste.

Two primary challenges with landfills are:

1) Unsupervised plastic waste decay triggering the release of excess CO_2 and methane into our atmosphere

2) Unchecked waste also contaminates the soil and groundwater supply.

DYK: As of 2020, there are around 185 operating sanitary landfills in the Philippines. This only serves about 24% of our local government units.

Source: Center for International Environmental law, "Plastics and Climate"; Environment Management Bureau - Department of Environment and Natural Resources

ANY MORE?

Microplastics = macroproblems

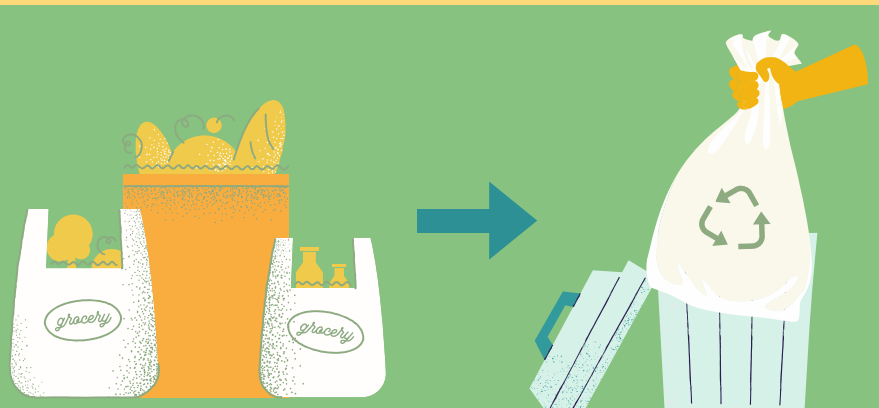
Plastic ends up being exposed to the harsh elements like extreme heat and other physical conditions many times.

This results in plastic breaking down into smaller and smaller particles — generally called microplastics.

Microplastics tend to affect body functions of some organisms. For example, microplastics cause disruption in the ability of phytoplankton to absorb CO_2, which in turn inhibits our oceans' carbon sink effect.

Source: National Oceanic and Atmospheric Administration, "What are microplastics?", www.fern.org "What are carbon sinks?"

SO WHAT CAN WE DO AS SEATIZENS?



Reduce single-use plastic consumption in daily life whenever possible.

Reuse alternatives, like tumblers, bags, and cups.

Repurpose disposables by giving them another life (e.g., grocery bags as trash bags, milk tea cups as planters)

Rethink your purchases and refrain from purchasing more goods and products than you actually need. Think about the item's life cycle, or where it will and can go after its use.

Source: Reduce, Reuse, Recycle, United States Environmental Protection Agency

HOW CAN I INVOLVE OTHERS?

Band together with friends and other communities,
such as student organizations and colleagues! Share tips, tricks, solutions, and hold each other accountable.

Support non-profits and businesses,
and familiarize yourself with their calls and causes.

Reach out to your local government and favorite brands.
Curbing plastic pollution requires both government and business buy-in, which means not just calling them out, but calling them in.

TIME TO TURN THE TIDE.

As seatizens, we can do our part as individuals and as communities to create ripples of impact.

There are a lot of existing frameworks, laws, and campaigns, waiting for you to champion them and help change the current.