



COLLEGE OF
INNOVATION
THAMMASAT UNIVERSITY



AIT
Asian Institute of Technology

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China Responsible Tourism
Forum

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The Parkview Hotel
Shanghai, China

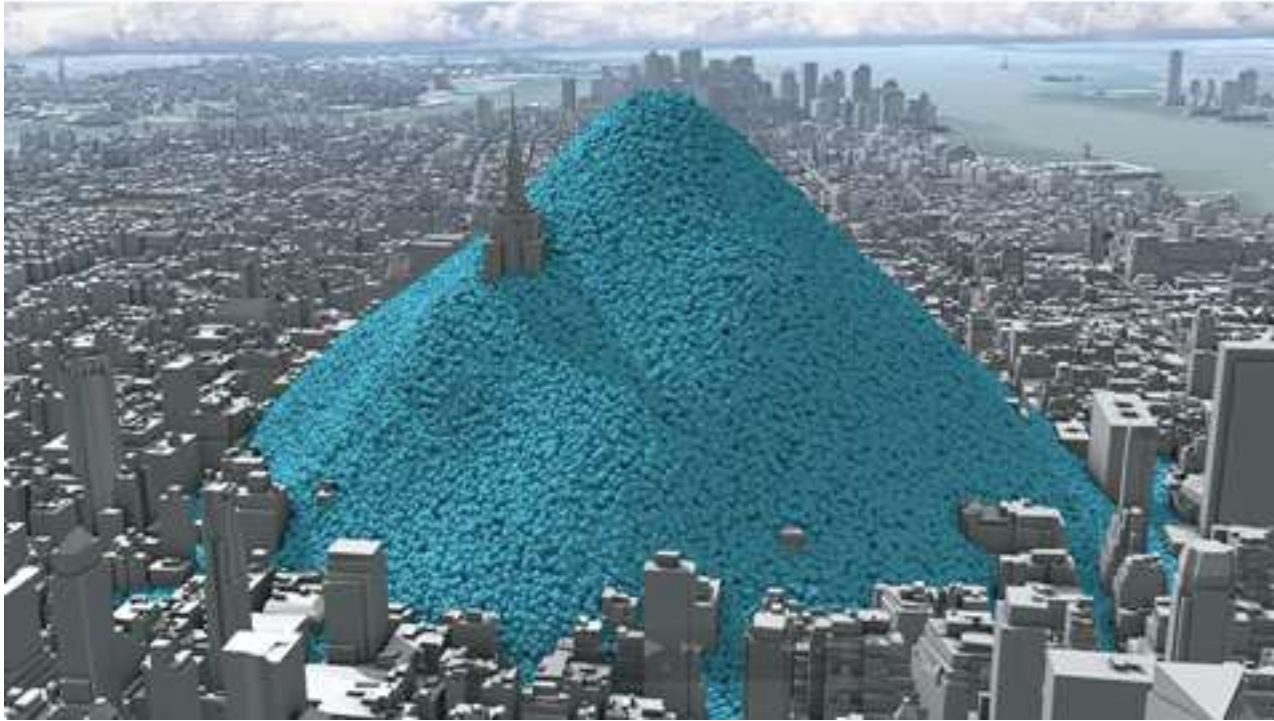
To calculate the CO₂ emissions from a gallon of fuel, the carbon emissions are multiplied by the ratio of the molecular weight of CO₂ (m.w. 44) to the molecular weight of carbon (m.w. 12): 44/12.

1. CO₂ emissions from a gallon of gasoline therefore
 - = 2,421 grams x 0.99 x (44/12)
 - = 8,788 grams
 - = 8.8 kg/gallon
 - = 19.4 pounds/gallon or litre equivalents
2. CO₂ emissions from a gallon of diesel
 - = 2,778 grams x 0.99 x (44/12)
 - = 10,084 grams
 - = 10.1 kg/gallon
 - = 22.2 pounds/gallon or litre equivalents.



Every day we wrap the planet in a paper-thick layer of carbon dioxide! The 80 million tonnes of CO₂ we release to the atmosphere every day by burning fossil fuels would be 80 microns thick if it were a single, uninterrupted layer at 100% concentration over our heads. Over the course of a year, that amounts to 31mm, or over an inch.

We call this imagined layer the Carbon Quilt – since pre-industrial times its thickness has increased from 2.3 metres to 3.2 metres.



In 2010 New York City added 54 million metric tons of CO₂ to the atmosphere, but that number means little to most people because few of us have a sense of scale for atmospheric pollution.

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THE GREAT PACIFIC GARBAGE PATCH



Ocean currents collect floating garbage for thousands of miles and drop it into the North Pacific Subtropical Gyre, one of several major ocean vortices around the world. Eventually the trash is packed into a convergence zone that links two eastern and western garbage patches, collectively forming the Great Pacific Garbage Patch.

REPLAY



SOURCE: NOAA, Greenpeace

In the broad expanse of the northern Pacific Ocean, there exists the North Pacific Subtropical Gyre, a slowly moving, clockwise spiral of currents created by a high-pressure system of air currents. The area is an **oceanic desert**, filled with tiny phytoplankton but few big fish or mammals. Due to its lack of large fish and gentle breezes, fishermen and sailors rarely travel through the gyre. But the area is filled with something besides plankton: trash, millions of pounds of it, most of it plastic. It's the largest landfill in the world and it floats in the middle of the ocean.

The gyre has actually given birth to two large masses of ever-accumulating trash, known as the **Western and Eastern Pacific Garbage Patches**, sometimes collectively called the **Great Pacific Garbage Patch**.

The Eastern Garbage Patch floats between Hawaii and California and scientists estimate its size as **two times bigger than Texas.**

The Western Garbage Patch forms east of Japan and west of Hawaii. Each swirling mass of refuse is massive and collects trash from all over the world. The patches are connected by a thin 6,000-mile long current called the Subtropical Convergence Zone. Research flights showed that significant amounts of trash also accumulate in the Convergence Zone.

<http://science.howstuffworks.com/environmental/earth/oceanography/great-pacific-garbage-patch.htm>







The image shows a presentation slide. The background is a vibrant green with a pattern of faint, overlapping hexagons. On the right side, there is a white rectangular area. At the top of this white area is a solid dark grey rectangle. Below it, the text "THANK YOU" is centered in a bold, green, sans-serif font. At the bottom of the white area, there is a thick, horizontal green bar.

THANK YOU