



Project SolarUK

Planet Health Check Report



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What is COP27?

27th Conference of the Parties (COP) of the UN Framework Convention on Climate Change held in Sharm El-Sheikh, Egypt

Goals of COP27

- Reducing Emissions
- Helping Developing Countries Prepare for and Deal with Climate Change
- Securing Technological and Financial Support for Developing Countries

78% of women surveyed took steps to reduce electricity usage in their households compared to just 60% of men

1.5°C

Climate Change Experts agree that the increase in global temperature since the industrial revolution should remain below 1.5°C

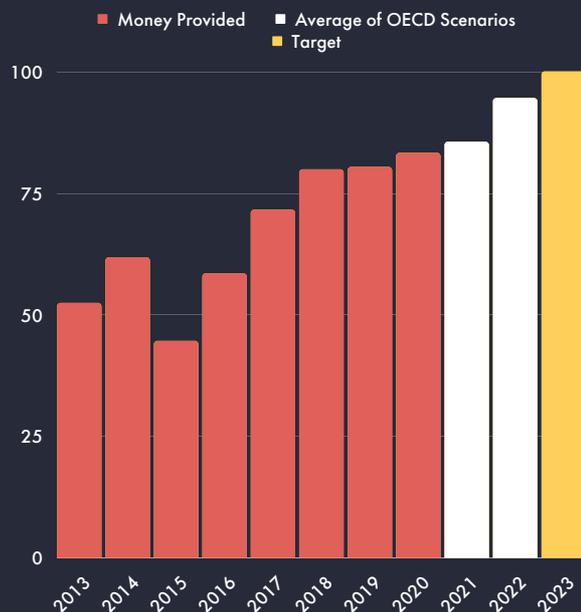
Paris Accord

2015 Paris Agreement where, for the first time, all world nations united to tackle global warming and reduce greenhouse gas emissions

Only 23% of under 25-year olds knew what COP27 was

83% of over 55-year olds are taking steps to reduce household waste

Climate Finance Provided by Developed Countries (Billions US\$)



Data Obtained from OECD

In 2009 the 'developed' governments attending the conference pledged to donate \$100 billion USD a year by the year 2020. Whilst this target has not yet been met, figures provided by the OECD indicate that this amount will be reached by the end of 2023.

From COP26

Over 40 governments committed to halt funding coal power

Over 30 countries and financial institutions pledged to divert financing fossil fuel developments to green energy by 2023

What is left to discuss from COP26 this year?

Loss and Damage Financing

70% of current climate financing are loans which plunge financially struggling countries even further into debt, for example, Pakistan is set to ask for billions in loans to offer relief from the impact of the mass flooding they are suffering from. Despite already being in public debt of over \$250 billion dollars.

Global Carbon Market

A global carbon market would seek to include the price of emissions into products and services globally, ensuring the monetary cost of a product reflects the environmental cost to the consumer.

Reduce Coal Use

Strengthening preexisting commitments made by Governments at COP26 to reduce their use and funding of fossil fuels.

Outcomes of COP27

With regards to reducing the use of fossil fuels, there have been no big changes from COP26.

Pre-summit documents only set out to reduce global emissions by 1%, a far cry from the 45% reduction needed to keep global temperature rises below 1.5°C this decade. Solid plans have not been finalised at the summit.

An agreement to establish loss and damage funding was reached. A transitional committee has been set up to decide how the fund will be financed and how the money will be distributed.



Ozone Levels

One of the key statistics that's been linked to measuring the effect of climate change on the planet is the size of the hole in Earth's ozone layer.

Ozone is only a trace gas in the atmosphere - only 3 molecules for every 10 million molecules of air - but it is vital to all living things on the planet.



How does it help us?

Ozone traps ultraviolet radiation, which harms organisms as it penetrates protective layers such as skin, and damages DNA molecules.

Is the ozone layer healing?

Thankfully, yes. In the 1970s, scientists realised that our extensive use of ozone-depleting substances (ODS) was causing the layer to become thinner and thinner. In 1987 the Montreal Protocol was enacted, which focused on phasing out the production and consumption of ODS. Since then, the ozone layer has shown slow but consistent progress towards being repaired.

Damage to the ozone

Chlorofluorocarbons (CFCs) are a reason we have a thinning ozone layer. CFCs are in a lot of products, including refrigerants and plastic products. They deteriorate the ozone layer once in the stratosphere.



2022 Ozone Hole Area
23.2 million km²

Air Quality

Causes of air pollution

Human-made:

Internal combustion engines

Power generation

Industrial processes

Agricultural processes

Construction

Residential wood and coal burning

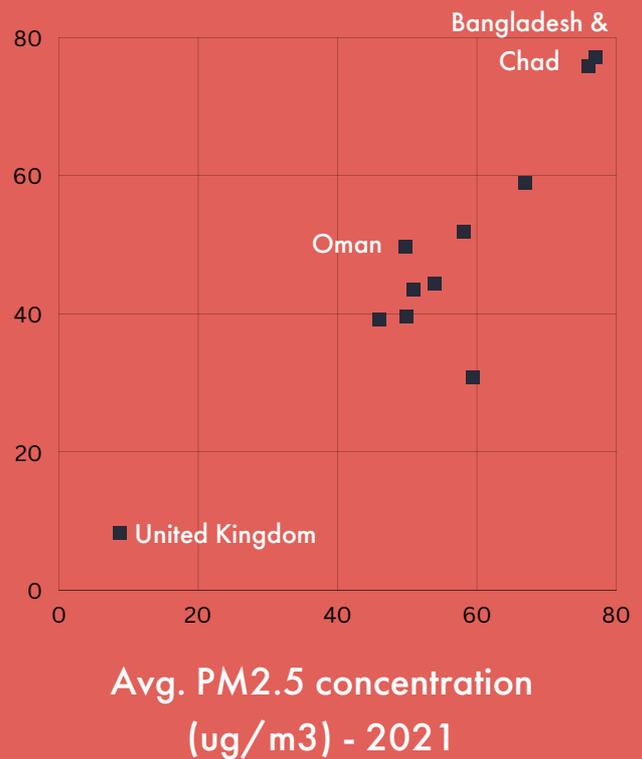
Natural:

Dust storms

Sandstorms

Wildfires

Avg. PM2.5 concentration
(ug/m³) - 2022



How do we measure it?

Air quality sensors around the world continually log the current air quality in almost every country across the globe. The standard measure of pollution in the air is to measure all particulates smaller than 2.5 microns or less in width. When levels of PM2.5 are elevated, it makes the air seem hazy.

The WHO has set a guideline for safe levels of PM2.5 in the air. The daily average limit is 35 micrograms per cubic meter of air, and the annual average limit is 12 micrograms per cubic meter of air. Only three areas of the world were within this limit in 2021, Puerto Rico, the U.S Virgin Islands, and New Caledonia.

There is still a lot of work to do to improve air quality and prevent the 7 million deaths attributed to air pollution every year.

UK Air Quality in 2021

x1.8 WHO guideline



Electric Vehicles & Chargers

Electric vehicles continue to grow in popularity. Car manufacturers around the world are committing to an Electric Vehicle (EV) future, an example being Ford, who have committed to ceasing production of their popular car the 'Fiesta' by June 2023.

Installation numbers

**1.8 million
public charging
stations
worldwide**

**6.6 million EVs
sold worldwide
in 2021**

**Over 35,000
public charging
points located
in the UK**

This is in order to focus on their electrification strategy, which includes the design and production of seven new EVs by 2024.

With more manufacturers committing to an electric future, the infrastructure needs to exist to support the charging of such large amounts of EVs.

This means an increase to electricity production, and a large demand for both public and private EV chargers.

Thankfully, steps are being taken towards building this infrastructure.



Solar Panel Installations

In the past 30 years, solar panel installations have grown exponentially. This is due to both the advancements in technology and also the benefits to owning them.

How many are there?

As with all things energy, it's not quite as simple as "how many solar panels are there"? Solar Panel installations are measured in energy capacity ie, the amount of energy they can produce. With the worldwide capacity in 2001 being 1.09GW, there has been an astonishing increase in solar panel usage up to 843.09GW in 2021.

**14.1GW of
Solar Capacity
across
1,216,725
installations
in the UK**

Why are they better?

The majority of commercially available solar panel modules use silicon as their main component. Being the second most abundant element on Earth (behind oxygen) silicon-based power generation is much more sustainable than current coal methods.

**The silicon cells
manufactured from 1
tonne of sand will go on
to produce as much
energy as burning
500,000 tonnes of coal!**



Wind Power

For the foreseeable future wind power looks set to play a crucial role in producing sustainable energy and moving away from fossil fuel and gas which have a disastrous effect on the environment to acquire and utilise.

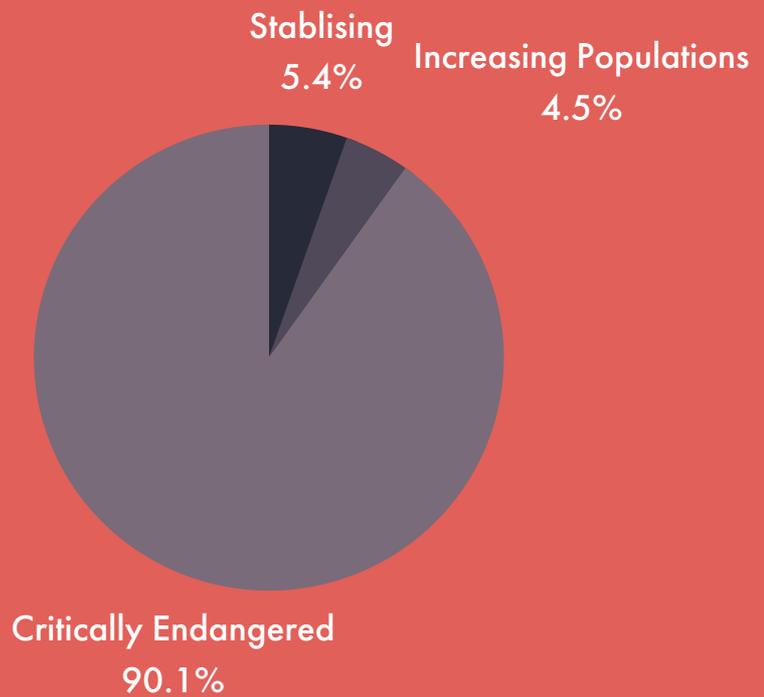
Where are we?

- In 2021 wind electricity generation increased by a record 273 TWh (up 17%). This is 55% higher than what was achieved in 2020 and was the highest among all renewable power technologies.
- Currently, the UK has 500 offshore windfarms which are producing 12% of the nations electricity (12GW) the plan is to increase to 50GW by 2030
- To get on track with the Net Zero Emissions promise by 2050 it is necessary to raise average annual capacity additions to almost 250 GW, more than double 2020's record growth

The largest wind farm in the world is located just off the coast of Yorkshire

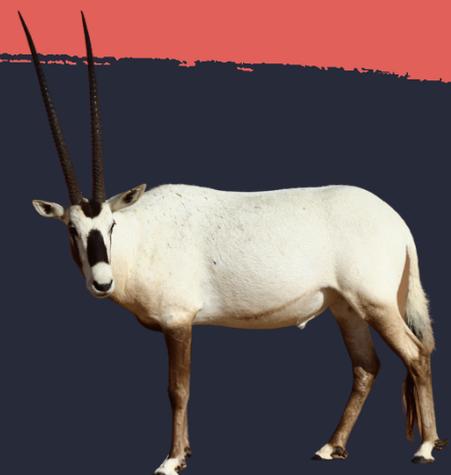
Extinction & Animal Restoration

The world's animals are in crisis, with more than 40,000 threatened with extinction, according to the IUCN Red List of Threatened Species. However, Fauna and Flora International, the wildlife conservation organization, listed several species that have since rebounded from near extinction. Of the 201 critically endangered species listed, 10 are increasing in population and 12 are stabilizing.



A combination of hunting and habitat destruction throughout the 20th century drove the mountain gorilla, an extremely rare primate, to the verge of extinction. Around 1,063 mountain gorillas remain in the world today, according to FFI. In 2018, the species went from "critically endangered" status to "endangered".

The Arabian oryx, a desert antelope in South Yemen, was nearly decimated by hunters until a breeding program to capture the last remaining wild oryx was established. In 1982, a herd of 10 oryx were released into the open desert. Today, over 1,000 Arabian oryx roam the Middle East.



Ice & Sea Levels

Ice covers 10% of the Earth's surface, and is disappearing rapidly. Climate change has affected glaciers, sea ice, and continental ice sheets worldwide.

This has meant global sea levels have risen around 8–9 inches since 1880. In 2021, global mean sea level was 3.8 inches above 1993 levels. The rising water level is mostly due to a combination of melt water from glaciers and ice sheets and thermal expansion of seawater as it warms.

What does that mean?

400 billion tons total glacier loss per year since 1994. The decadal average loss from glaciers quintupled over the past few decades.

High-tide flooding is now more than 900% more frequent than it was 50 years ago.

8/10 of the world's largest cities are near coastal areas which means they are massively at risk. In urban settings along coastlines around the world, rising seas threaten infrastructure necessary for local jobs and regional industries. Roads, bridges, subways, water supplies, sewage treatment plants—the list is practically endless—are all at risk from sea level rise.



Flood

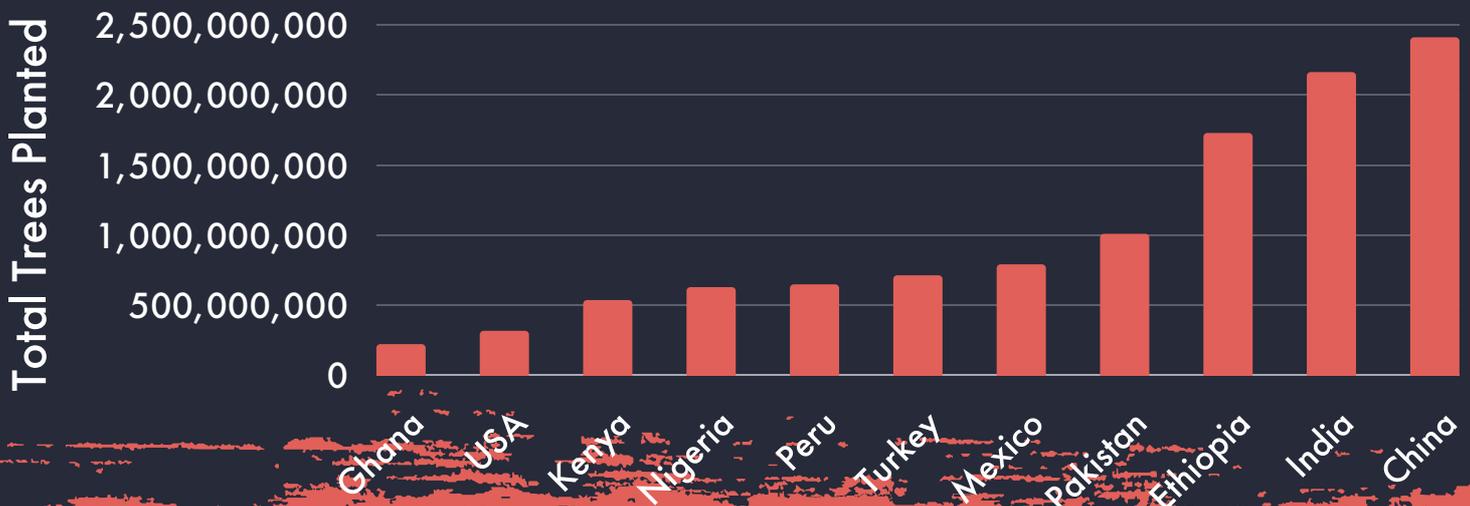
Trees Planted

For hundreds of years, humanity's progress has increasingly come at considerable cost to nature and the environment. This trajectory is largely responsible for the state of the world's forests today. Trees and forests have clear potential to meet the need for equitable, cost-effective climate solutions that can be implemented rapidly at scale around the globe.



Forests cover 31% of Earth's land surface but that area is shrinking — 420 million hectares of our forests were lost to deforestation between 1990-2021 alone. Halting deforestation and maintaining forests could avoid emitting 3.6 +/- 2 gigatonnes of carbon dioxide equivalent (GtCO₂e) per year between 2020 and 2050.

Countries Who Plant The Most Trees



- The world plans to plant at least 1 trillion trees by 2030.
- Ethiopia set a world record in 2019 by planting 350 million trees in one day!
- Approximately 1.9 billion trees are planted yearly.
- 15 billion trees are cut down every year.
- Planted forests cover approximately 294 million hectares, or 7% of the global forest area.