



Climate**Carbon**
Do good feel good!

Presents

Your Journey To Net Zero

- You have the power to stop climate change by initiating or accelerating your Net Zero journey.
- The time for decarbonization starts NOW!
- Keep it same big lettering
- Buy carbon credits, offsets, RECS & I-RECS and transition to Net Zero carbon economy

Climate Change



Climate change due to global warming is the biggest threat to the existence of the whole world.

It is already affecting us with extreme weather conditions (drought, heat waves, heavy rain, floods, and landslides). Other consequences of rapidly changing climate include rising sea levels, ocean acidification, and loss of biodiversity. With every passing year, these events are becoming more frequent, resulting in huge losses of life and property.

The cause of current climate change is largely due to human activity like burning fossil fuels, natural gas, oil, and coal. Combustion of these materials releases what are called greenhouse gases into the earth's atmosphere. Carbon dioxide, methane, nitrous oxide, and fluorinated gases are examples of greenhouse gases that contribute to climate change. Deforestation, intensive farming, waste disposal, mining, and overconsumption are some of the more human activities that contribute to climate change.

At the pace of current GHG emissions, scientists expect an increase of between 1.5° and 5.3°C (34.7° to 41.5°F) in average temperature by 2100. If no action is taken, it would have harmful consequences to humanity and the biosphere.

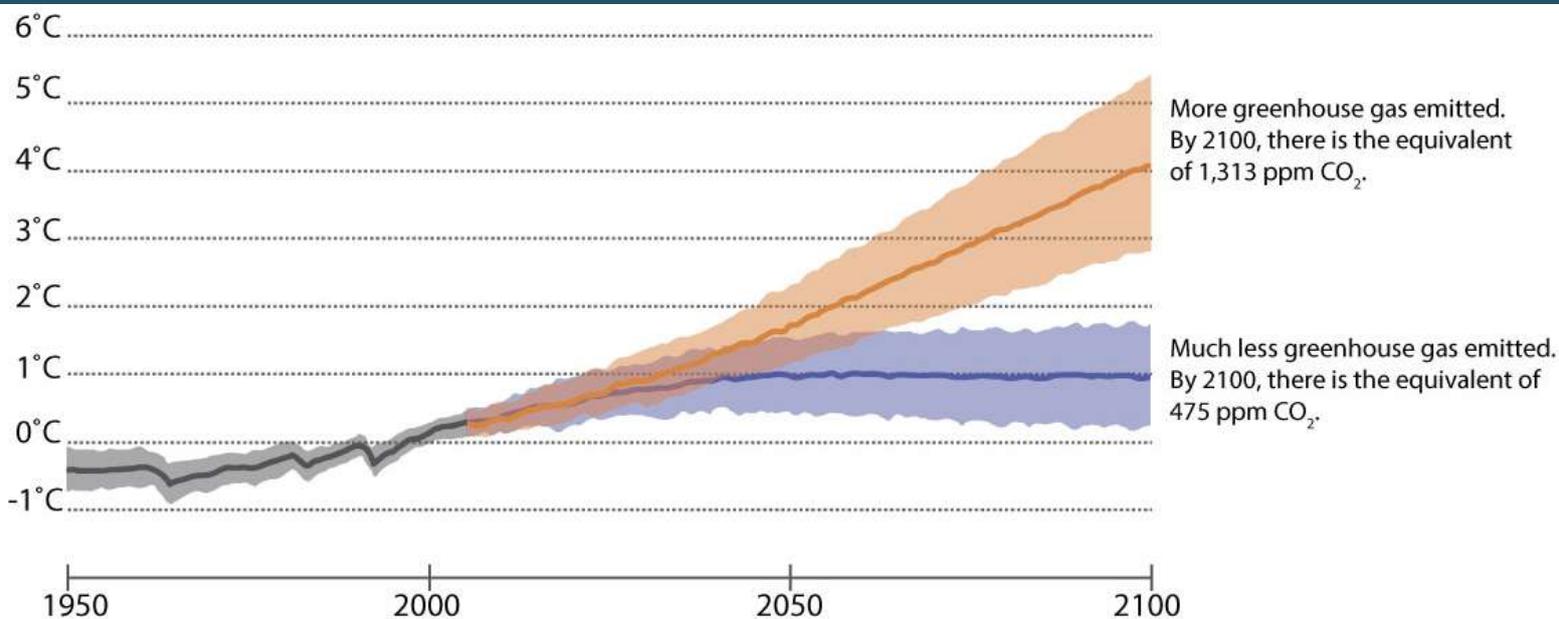


"There are no passengers on Spaceship Earth. We are all crew"

What is Global Warming?

Global Warming, the gradual heating of Earth's surface, oceans, and atmosphere, is caused by human activity, primarily due to the burning of fossil fuels that pumps carbon dioxide, methane, nitrous oxide, and other greenhouse gases into the atmosphere. Global warming has presented a serious issue called climate change. Sometimes these phrases are used interchangeably.

However, they are different. Global warming causes climate change, which poses a serious threat to life on earth in the form of extreme weather. This causes a general increase in average temperatures of the Earth, which modifies the weather balances and ecosystems for a long time.



The different

futures that

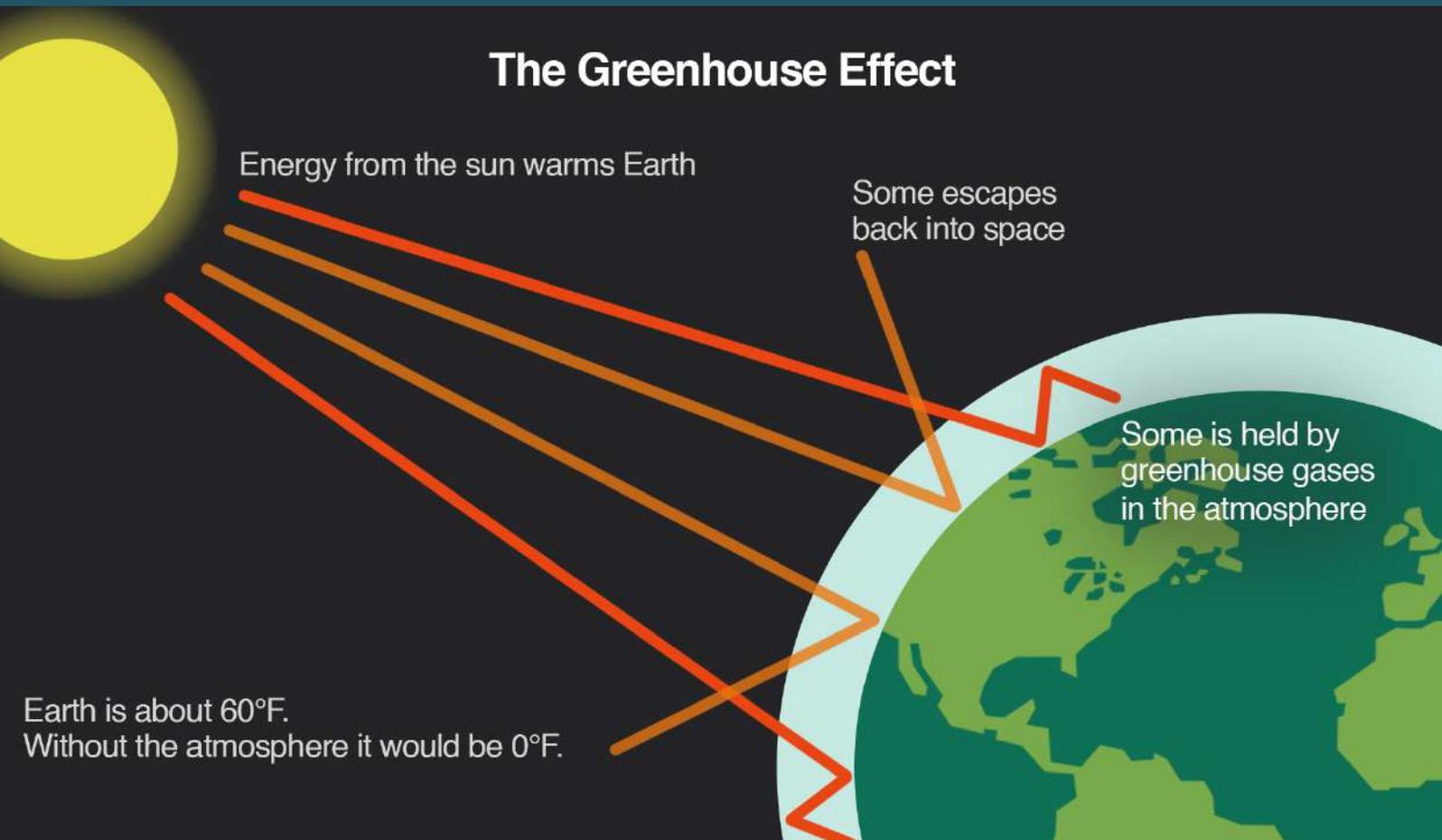
lie ahead.

+1.5 °C

+2 °C

+3 °C

The Greenhouse Effect



CO₂

1 GWP (Global Warming Potential) by 1 ton of CO₂

PFC

Ranges till 12,000 GWP

CH₄

Methane - 25 GWP (Waste, Livestock)

N₂O

Nitrous Oxide - 298 GWP (Fertilizers)

SF₆

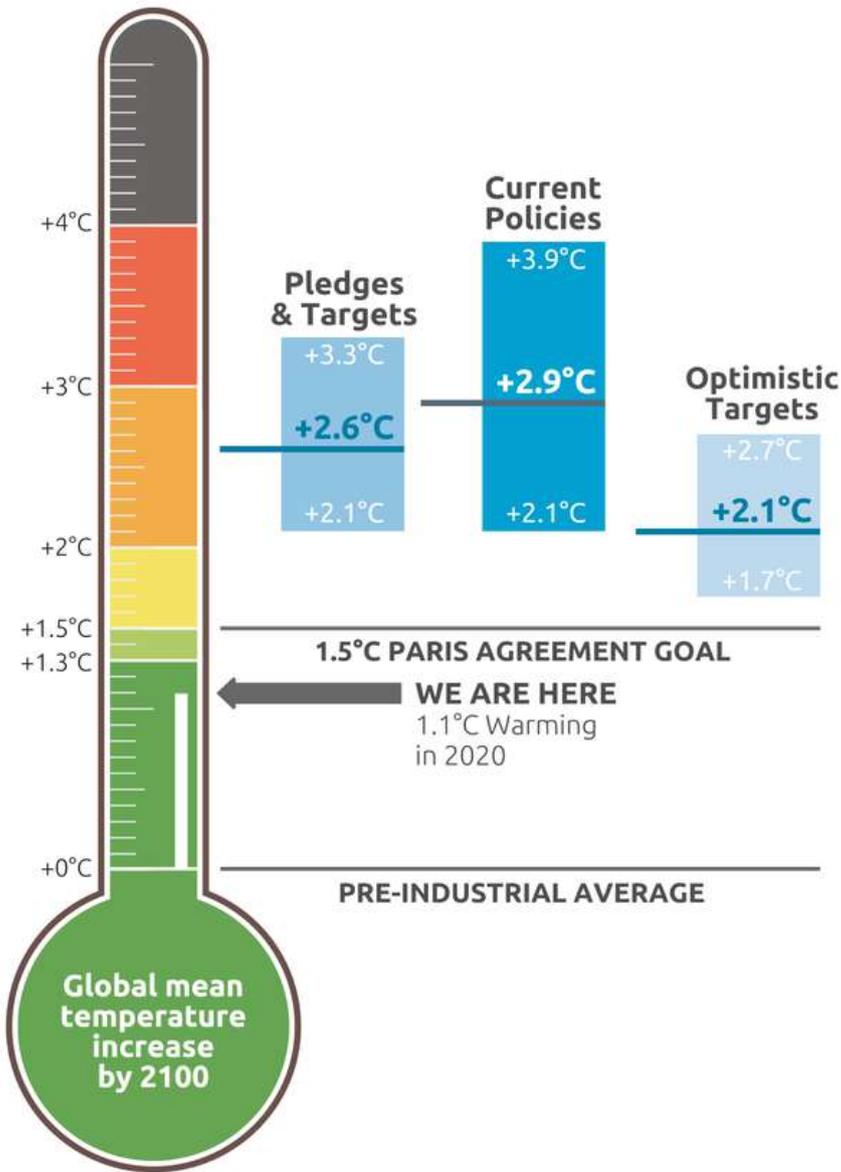
Sulphur Hexafluoride 24,000 GWP

HFC

Ranges till 14,000 GWP

"Our house is still on fire. Our inaction is fueling the flames by the hour."

Global Temperature Rise



CAT warming projections
Global temperature increase by 2100

December 2020 Update



What's in a TON of CO₂?



1 Tree
(40 year lifetime)
= 1 tCO₂



1,216 Units of
electricity consumption in India



2,397 Miles driven by a
average passenger car



Burning 390 litre
of diesel oil



A little under the amount of
carbon emitted by the
average person in U.S each month



Carbon captured by
1 acre of U.S forest in a year



Equivalent of lighting one
household of 4 people for 5 years



1 return economy flight
from New York to Paris

CLIMATE CARBON CONCENTRATIONS



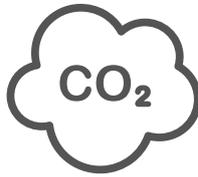
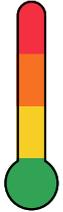
Ice Sheets Melting

429 billion metric tons per year

Global Temperature

Since 2000, 19 of the warmest years have occurred

2.1°F ↑



Carbon Dioxide

↑ 147%

Concentration of carbon dioxide increase in the atmosphere since 1750

Nitrous Oxide

Concentration of nitrous oxide increase in the atmosphere since 1750

↑ 123%



Sea Level

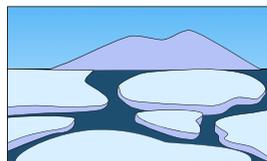
↑ 3.3mm per year

Over the last 100 years, the global average sea level has risen almost 7 inches (178 mm)

Methane

Concentration of nitrous oxide increase in the atmosphere since 1750

↑ 259%



Arctic Ice

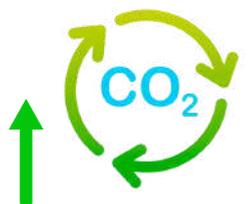
↓ 12.1% per decade

Ice in the Arctic sea shrank to its lowest level on record in 2012

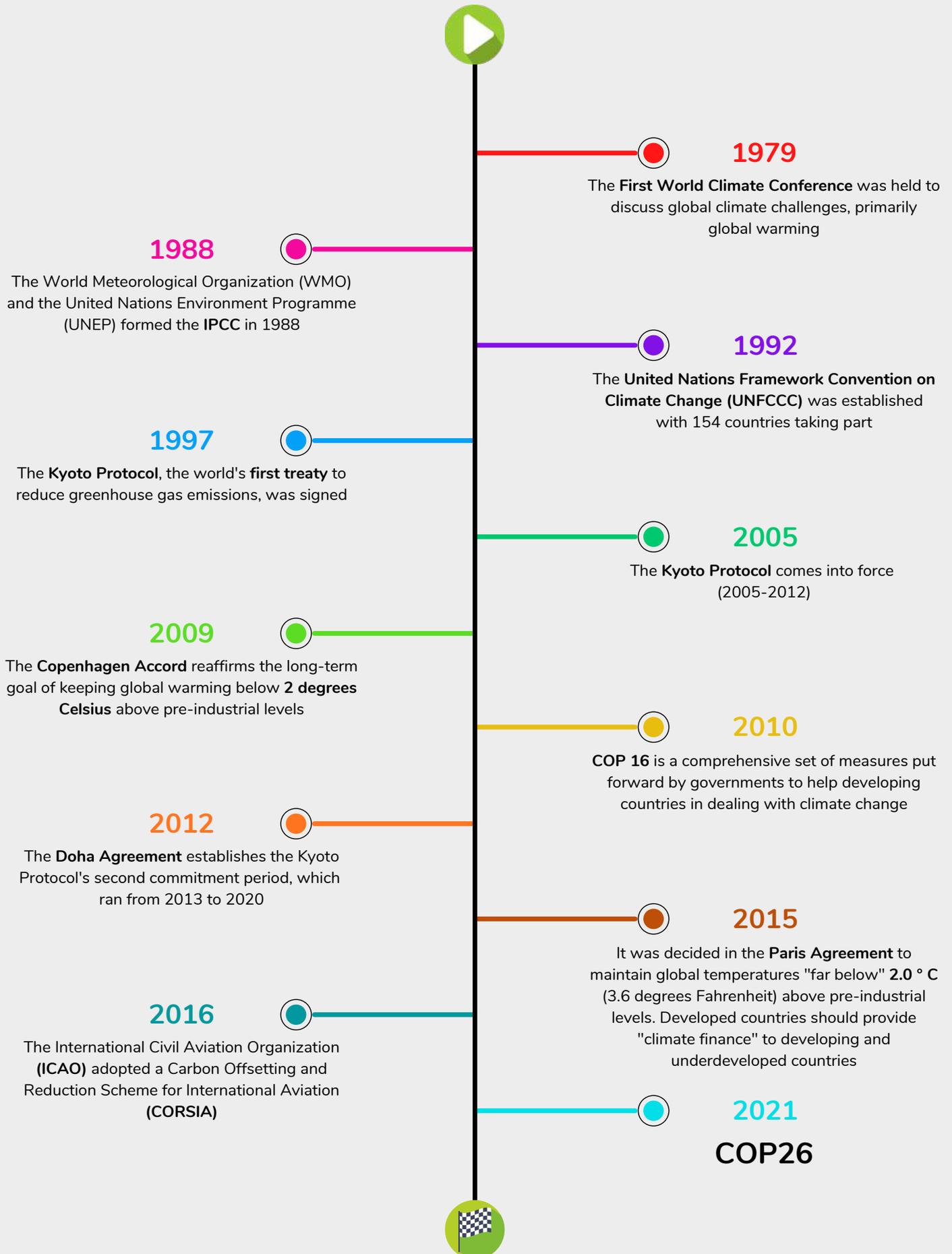
Carbon Dioxide

Carbon dioxide levels in the atmosphere are at their highest in 100,000 years

↑ 419 PPM



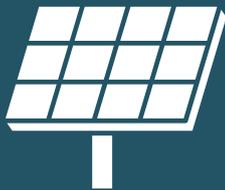
Timeline



Sustainable Lifestyle



What does the term "*Sustainable Lifestyle*" exactly mean?
Here are a few examples



Switching to a **Solar Water Heater** saves **757 tons** of CO₂ emissions each year



Reduce **Dairy and Meat products** consumption. These are responsible for **18%** of world GHG emissions per year



The use of a **Pressure Cooker** reduces CO₂ emissions by **137 tons** per household annually



Sending back **Appliances** to the manufacturer. Electronic Gadgets account for **40%** of heavy metals in landfills



Switching to **Organic Food**. Since organic farming consumes **30%** less energy than conventional farming



What is UNFCCC?

The United Nations Framework Convention on Climate Change (UNFCCC) is an international environmental treaty addressing climate change, negotiated and signed by 154 states at the United Nations Conference on Environment and Development (UNCED), informally known as the Earth Summit.

The Earth Summit was held in Rio de Janeiro from June 3 to 14, 1992. The UNFCCC seeks for the stabilization of greenhouse gas concentrations atmosphere at a level that would prevent dangerous anthropogenic human-induced interference with the earth's climate system.

Kyoto Protocol



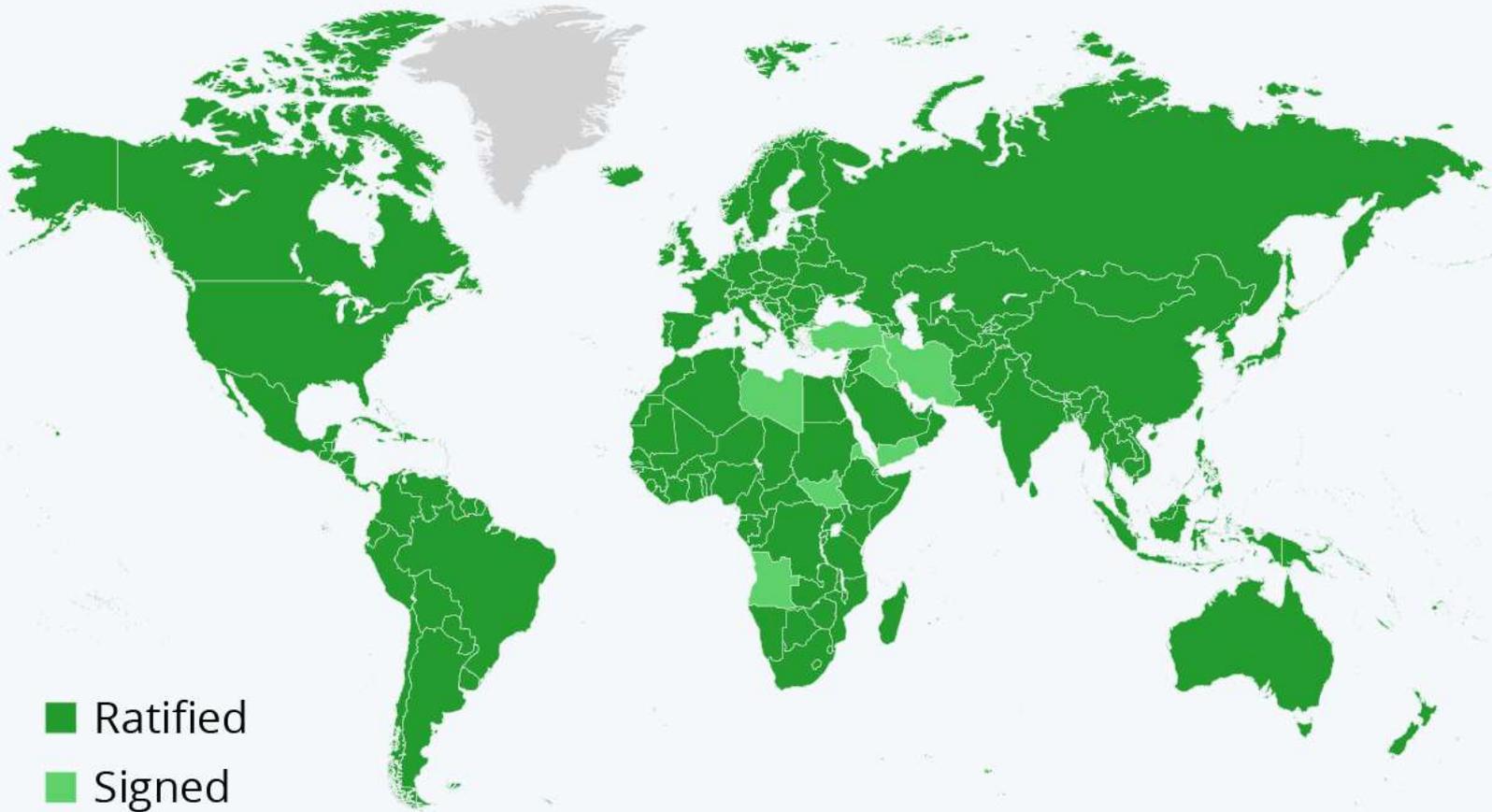
The **Kyoto Protocol** is an international treaty that extends the **UNFCCC** that commits state parties to reduce greenhouse gas emissions.

It was adopted in **Kyoto**, Japan on December 11, **1997**, and entered into force on February 16, **2005**.

The **Kyoto Protocol** is based on the principles and provisions of the convention and follows its annex-based structure. It only **binds developed countries** and places a heavier burden on them under the principle of "common but differentiated responsibility and respective capabilities", because it recognizes that they are **largely responsible for the current levels of GHG emissions in the atmosphere**.

The State of the Paris Agreement

Countries by their participation in the Paris Agreement
(as of April 21, 2021)

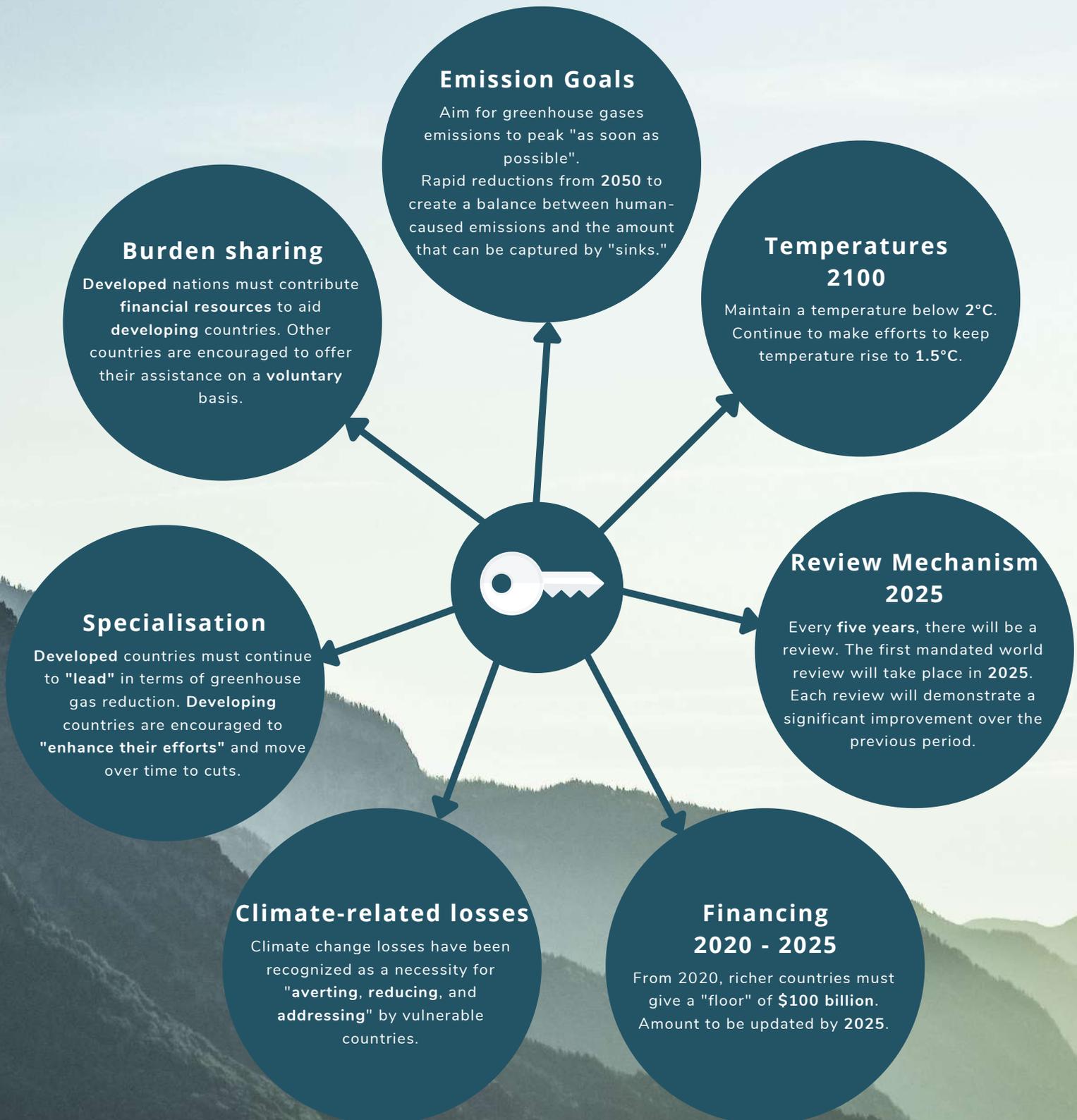


Paris Agreement

The Paris Agreement is a legally binding international treaty on climate change. It was adopted by **196 parties** at COP 21 in Paris, on **12 December 2015** and entered into force on **4 November 2016**. Its goal is to limit global warming to well below **2°C**, preferably to **1.5°C**, compared to pre-industrial levels.

To achieve this long-term temperature goal, countries aim to reach global peaking of greenhouse gas emissions as soon as possible to achieve a **climate-neutral world by 2050**.

Key Points in The Paris Agreement



Article 6 of The Paris Agreement

Article 6.1

Implementation of the NDC on a voluntary basis

- Reinforces the governance's decentralized and bottom-up structure and ethos
- Covers all existing partnerships
- "Enable for bigger ambition"

Article 6.2 - 6.3

Transfers of mitigation outcomes

- Cooperative Approaches that entail the international transmission of mitigating outcomes
- Allows Internationally transferred mitigation outcomes (ITMO) other than those provided by COP

Article 6.4 - 6.7

Mechanism to contribute to mitigation & support sustainable development

- The COP will have control over the ITMO's (CDM projects may be moved here)

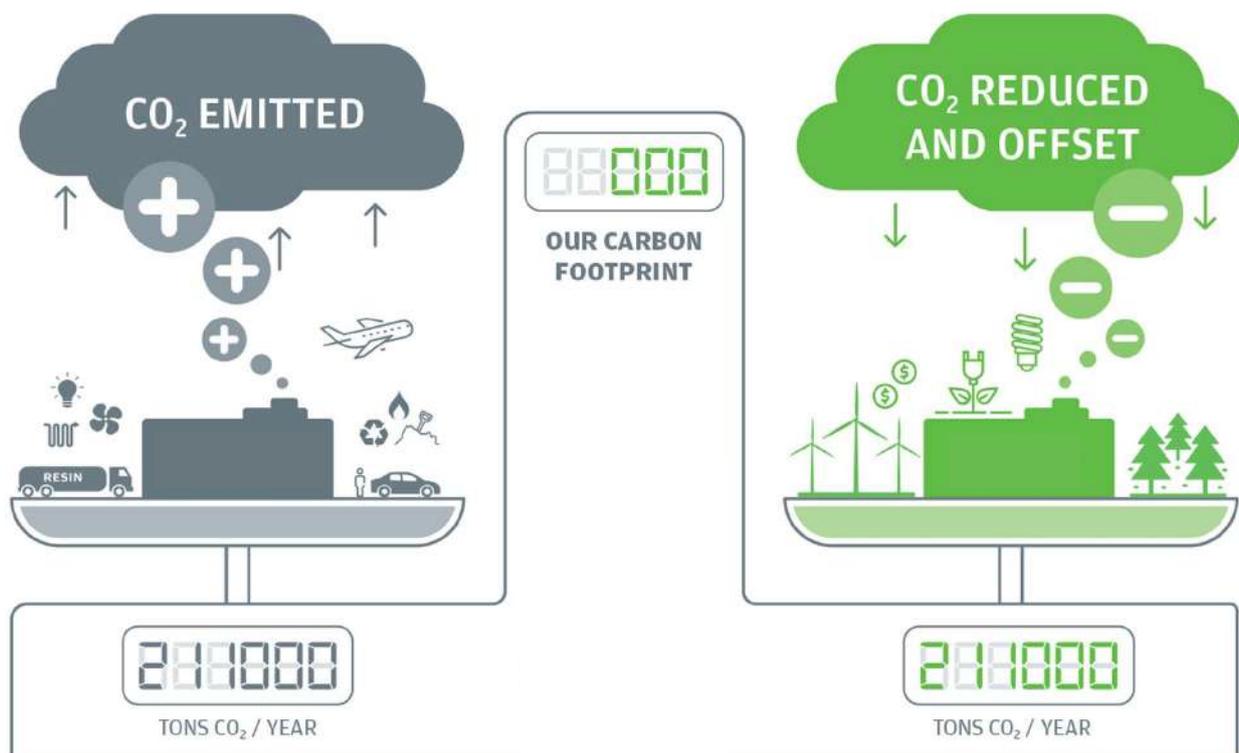
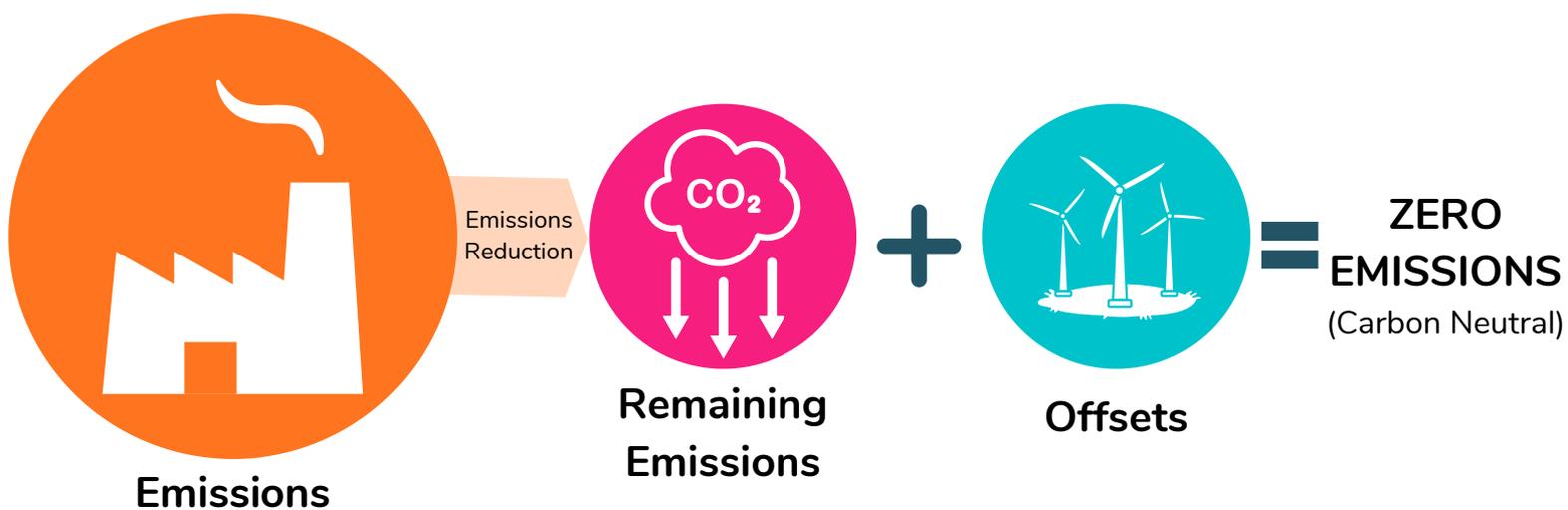
Article 6.8 - 6.9

Framework for nonmarket approaches

- They cover technology transfer and capacity building measures

What does the term "*Carbon Neutral*" mean?

Carbon neutral indicates that any CO₂ released into the environment as a result of a company's operations is offset by the removal of an equal amount. **Climate positive** is defined as an activity that goes beyond **net-zero** carbon emissions to provide an environmental benefit by removing more carbon dioxide from the atmosphere.



Net-Zero Emissions

How can we achieve it?



Investing in clean energy



Stopping deforestation & restoring degraded lands



Decarbonizing the aviation and shipping industry



Phasing out fossil fuel-based power stations



Shifting to electric vehicles



Reducing food wastage & efficient waste management



Increasing public transport



Renovating the buildings



Decarbonizing cement, steel and plastic industry



Eating more organic



Corporate strategies to achieve Net-Zero Emissions

- Replacing abatement with negative emissions
- Replacing abatement with avoided emissions from products and services
- Carbon Credits are used to replace "Value Chain" emission reductions
- Emission reductions in accordance with science
- Investing in sustainable projects viz. clean technologies

Journey of Carbon Markets

Kyoto Protocol 1997

Legally Binding Targets

During the first commitment period, industrialized countries were responsible for emissions of six primary greenhouse gases

Carbon as a new commodity created by new international market-based mechanisms

Facilitate sustainable development and provide additional adaptation assistance to developing countries

1st Commitment Period (CP-1) 2008-2012

Reducing the emissions by 5% compared to 1990

2nd Commitment Period (CP-2) 2013-2020

Reducing the emissions by 18% compared to 1990

6 Major GHG Gases CO₂ , CH₄ ,
N₂ O, HFC, PFC, SF₆ & NF₃

Market Based Mechanism

Emission Trading

Parties to the Kyoto Protocol are exchanging emission allowances

Joint Implementation

Credits for emissions avoided in Annex I countries through projects

Clean Development Mechanism

Credits for emissions reduced/avoided in developing countries as a result of sustainable development projects (non-Annex I countries)

Carbon Market Mechanisms

Compliance & Voluntary Carbon Markets are operating within some countries, regions, and with global coverage.

The most well-known is the "**Cap-and-Trade**" systems used by the European Union and California, in which the government sets a limit on how much greenhouse gas can be emitted by a particular business or sector of the economy. Businesses are then given an allowance of how many metric tons of CO₂ they can emit.

The **Clean Development Mechanism (CDM)**, an international carbon market mechanism established under the UN Kyoto Protocol on climate change, is another example. Developed countries had targets to reduce greenhouse gas emissions under the CDM, but underdeveloped countries didn't. In the CDM, underdeveloped and developing countries may sell "Carbon Credits" to developed countries, who could then use those emissions reductions to meet their own targets. CDM operations stopped in December 2020, as agreed.

Aside from the major compliance carbon markets mentioned above, there are a few regional and global voluntary carbon markets, such as the Gold Standard (GS), Voluntary Carbon Standard (VCS) and Global Carbon Council (GCC).

Many countries and region-specific Carbon Market schemes are now operating as voluntary programs.



Carbon Credits for Climate Change & Carbon Neutrality

Carbon credits (also known as "offsets") play an essential dual role in the fight against climate change:

- It allows businesses to contribute to decarbonization beyond their own carbon footprint, hastening the transition to a lower-carbon future.
- It also aids in the financing of carbon dioxide removal projects that produce negative emissions, which will be required to neutralize residual emissions, that will persist even under the most optimistic scenarios for decarbonization.

However, despite the fact that the voluntary carbon credit market is currently gaining traction, it is still relatively small.

Carbon Market Current Status



The global carbon market was valued at about *\$271 billion* in 2020, up *20%* from the previous year and marking the fourth straight year of record growth.

According to a study the *20%* growth came from the European Emission Trading System (EU-ETS), which accounted for nearly *90%* of global value.

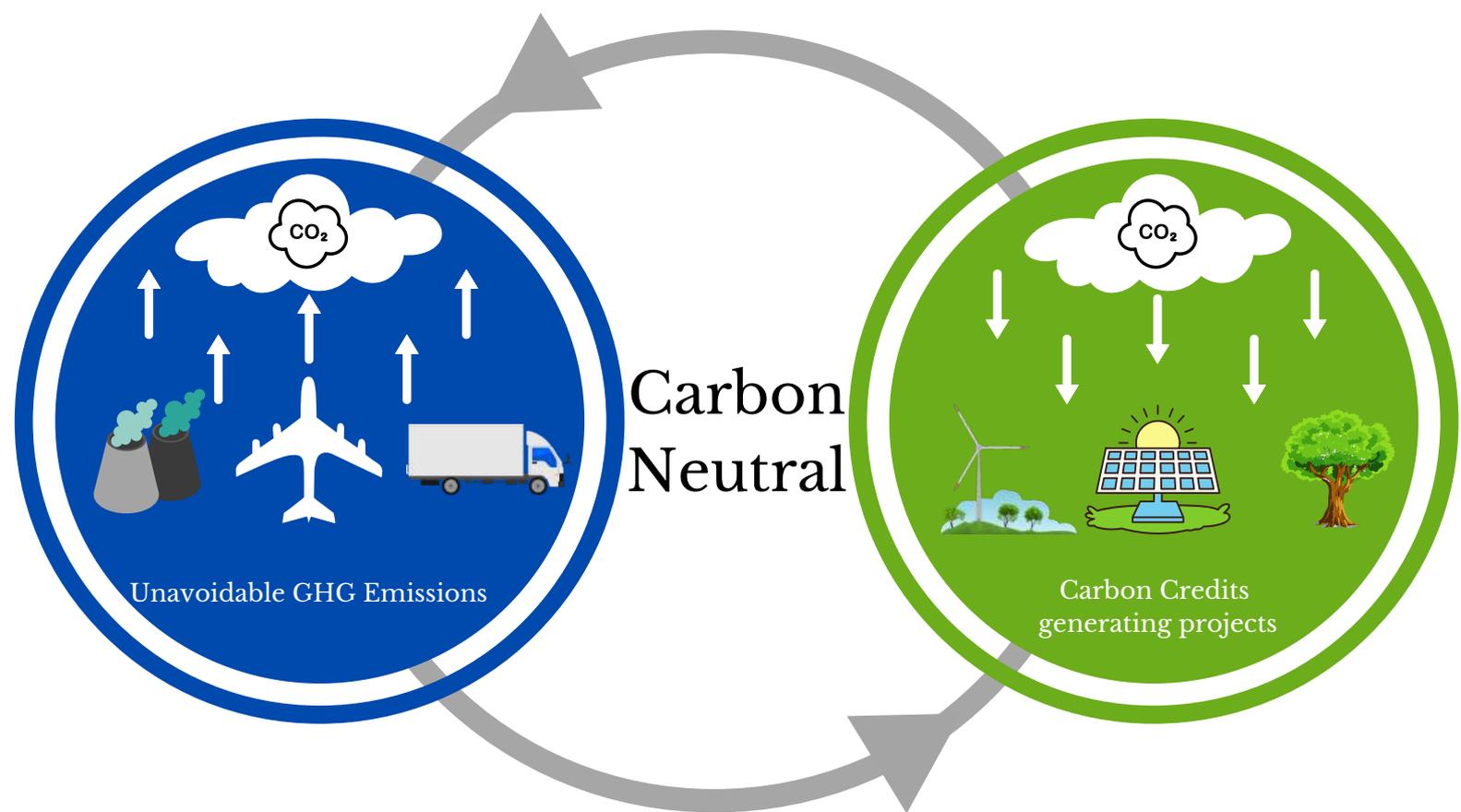
Since more than 110 countries, including the EU, the United States, the United Kingdom, Japan, South Korea and China, have promised to be carbon neutral by 2050, even higher levels of growth are on the horizon.

The implementation of the CORSIA program of ICAO (a UN entity) for carbon neutrality in the International Aviation industry is predicted to be the next big thing in the carbon sector.

According to a McKinsey report, demand for voluntary carbon credits might grow by a factor of 15 or more by 2030, and by up to 100 by 2050. Overall, the market for carbon credits could be worth upwards of *\$50 billion* in 2030.

Voluntary Carbon Offsets

Voluntary carbon offsetting means compensating unavoidable emissions by financing projects that remove GHG emissions



International Initiatives on Climate Change



Gold Standard
for the Global Goals



Recommended Resources (Books & Documentaries)

