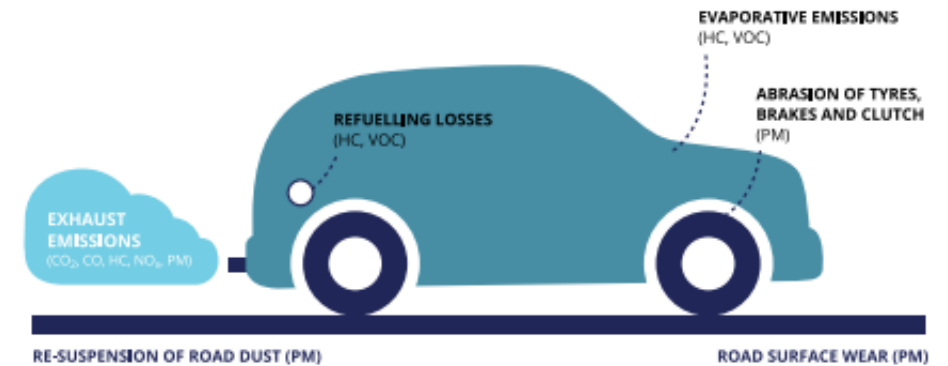
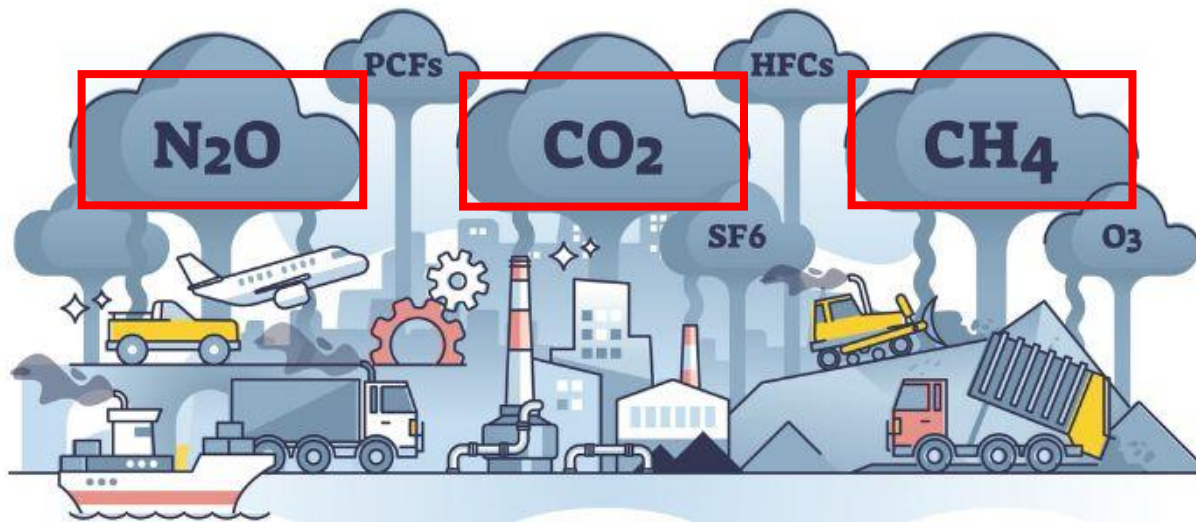


GASES DE EFECTO INVERNADERO

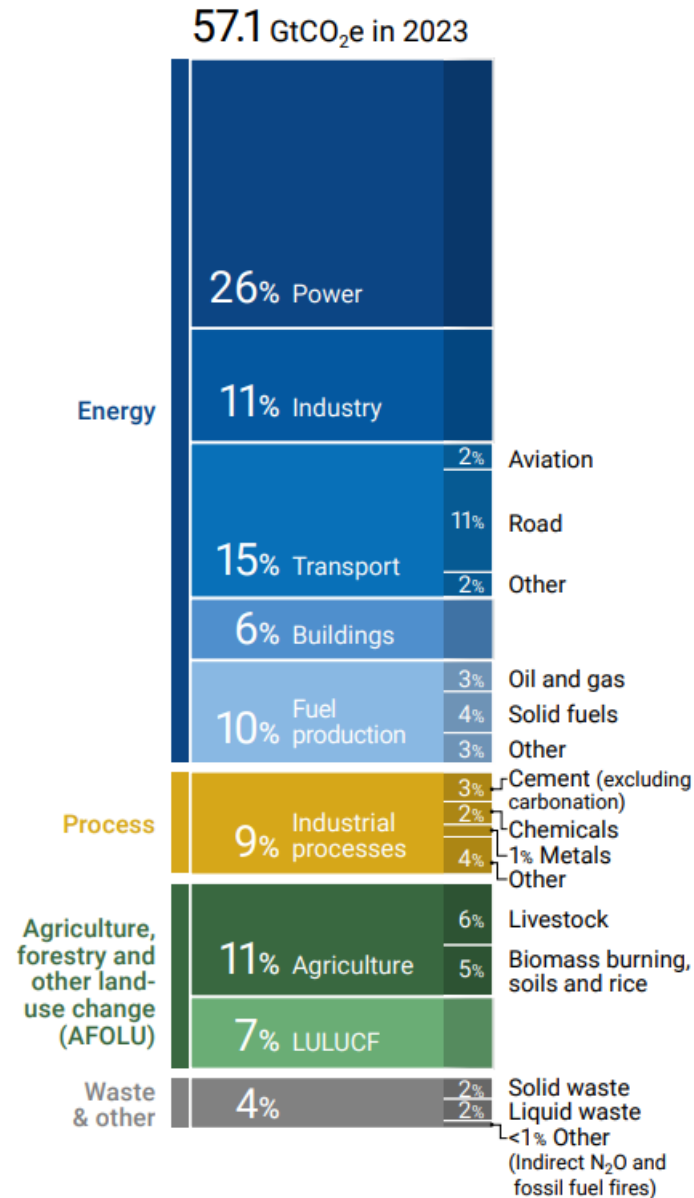
GHG Emissions Reporting



<https://www.vesselbot.com/blog/post/?post-slug=ghg-emissions-reporting>



EMISIONES DE GASES DE EFECTO INVERNADERO



<https://www.unep.org/resources/emissions-gap-report-2024>

GASES DE EFECTO INVERNADERO

Potencial de Calentamiento Global (Global Warming Potential)

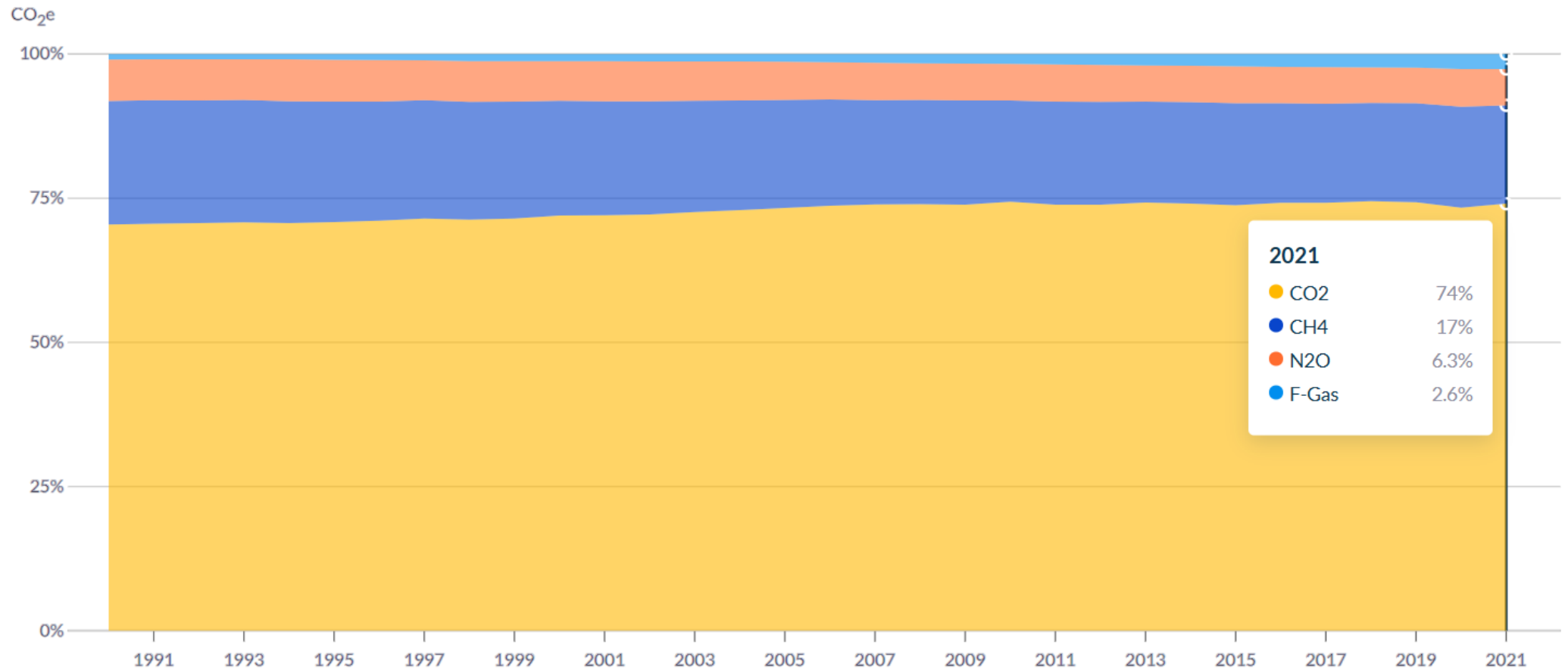
Industrial designation or common name	Chemical formula	GWP values for 100-year time horizon		
		Second Assessment Report (SAR)	Fourth Assessment Report (AR4)	Fifth Assessment Report (AR5)
Carbon dioxide	CO ₂	1	1	1
Methane	CH ₄	21	25	28
Nitrous oxide	N ₂ O	310	298	265

Fuente: GHG Protocol (2016)

Fuente: IPCC (2021)

Greenhouse Gas	100-Year Time Period				20-Year Time Period			
	AR4 2007	AR5 2014		AR6 2021	AR4 2007	AR5 2014		AR6 2021
	Feedback Not Included		Feedback Included		Feedback Not Included		Feedback Included	
CO ₂	1	1	1	1	1	1	1	1
CH ₄ fossil origin	25	28	34	29.8	72	84	86	82.5
CH ₄ non fossil origin				27.2				80.8
N ₂ O	298	265	298	273	289	264	268	273

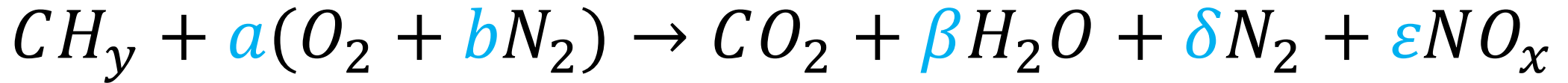
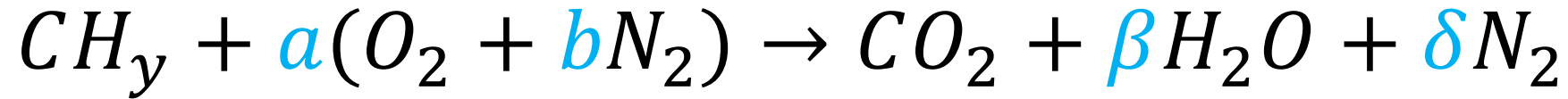
GASES DE EFECTO INVERNADERO



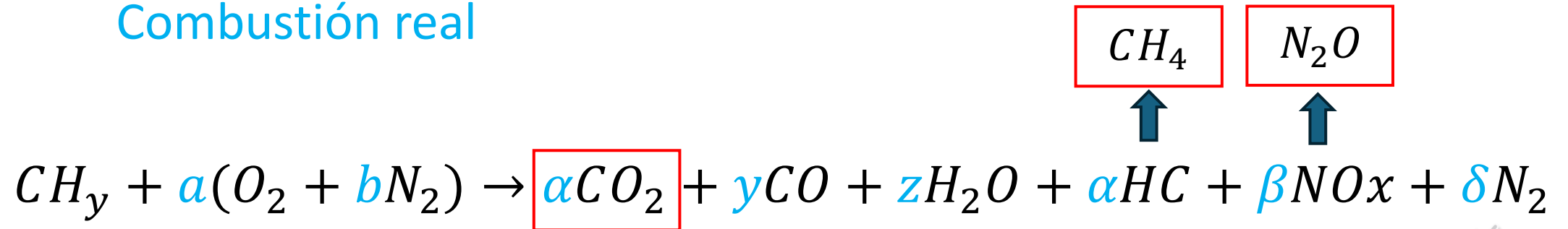
Fuente: Climate Watch Data

COMBUSTIÓN

Combustión estequiométrica

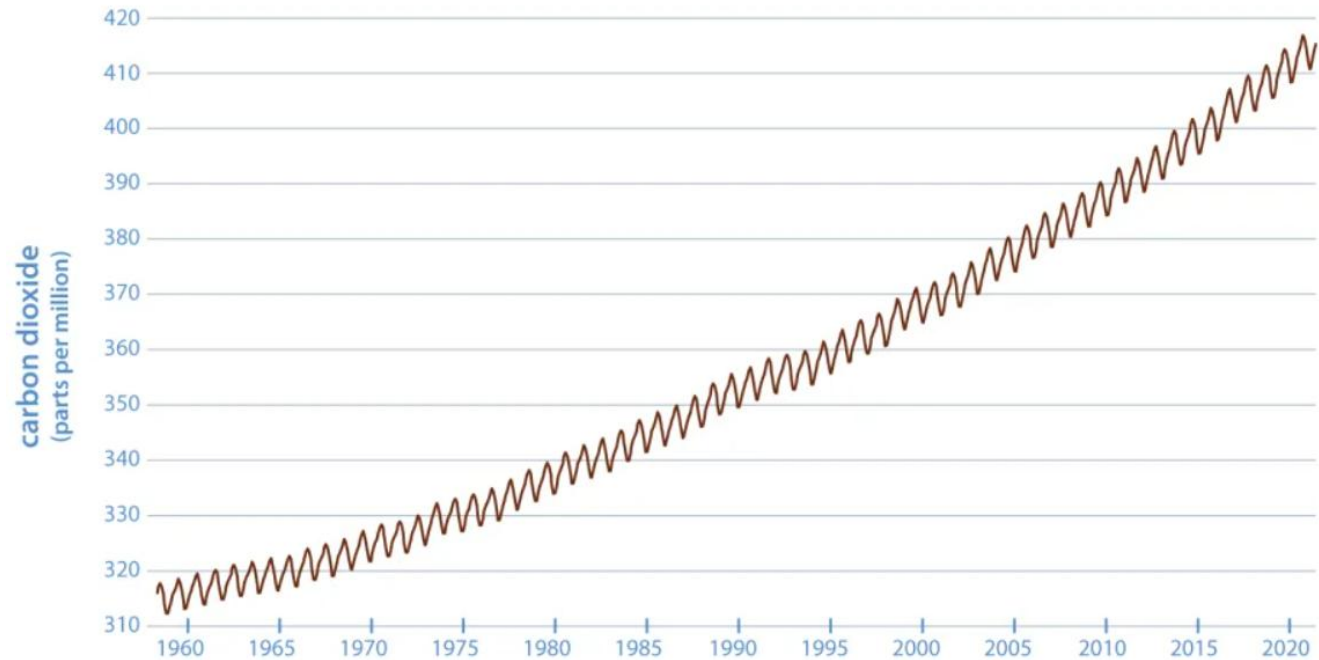
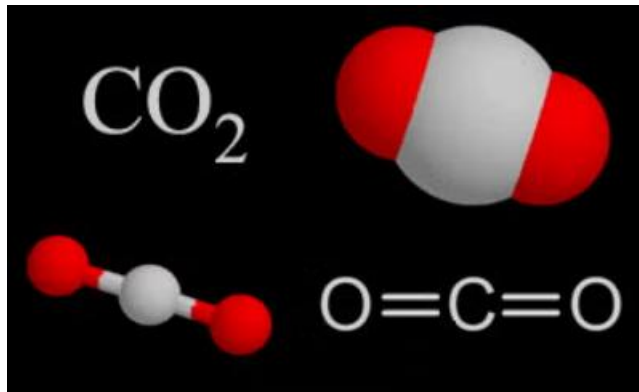


Combustión real



GASES DE EFECTO INVERNADERO

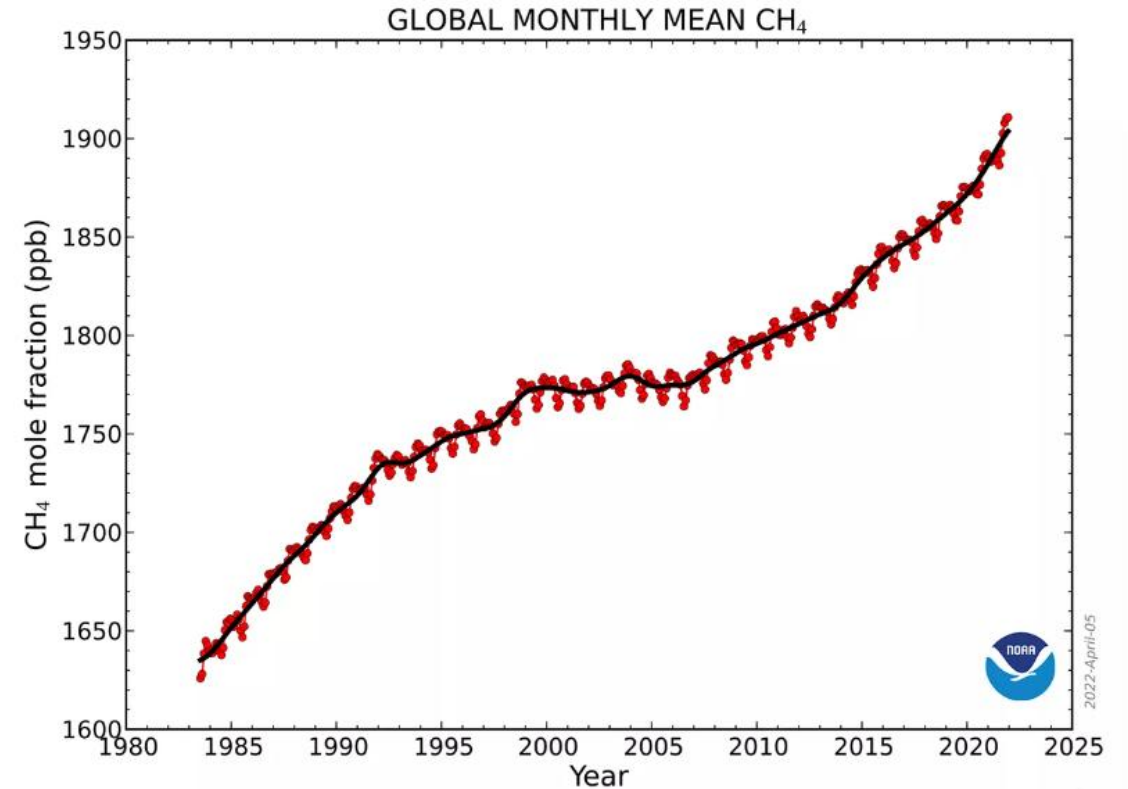
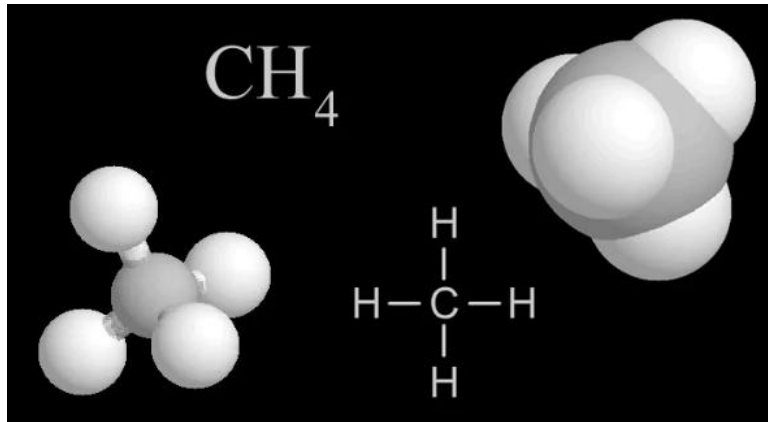
Dióxido de carbono (CO₂)



<https://scied.ucar.edu/learning-zone/how-climate-works/carbon-dioxide>

GASES DE EFECTO INVERNADERO

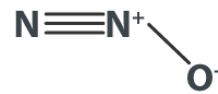
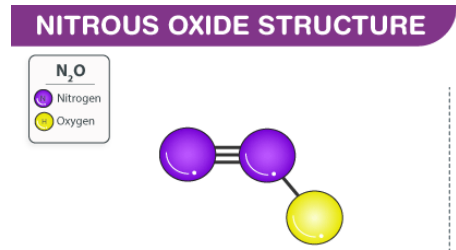
Metano (CH₄)



<https://www.nesdis.noaa.gov/news/unraveling-the-origins-of-potent-greenhouse-gas>

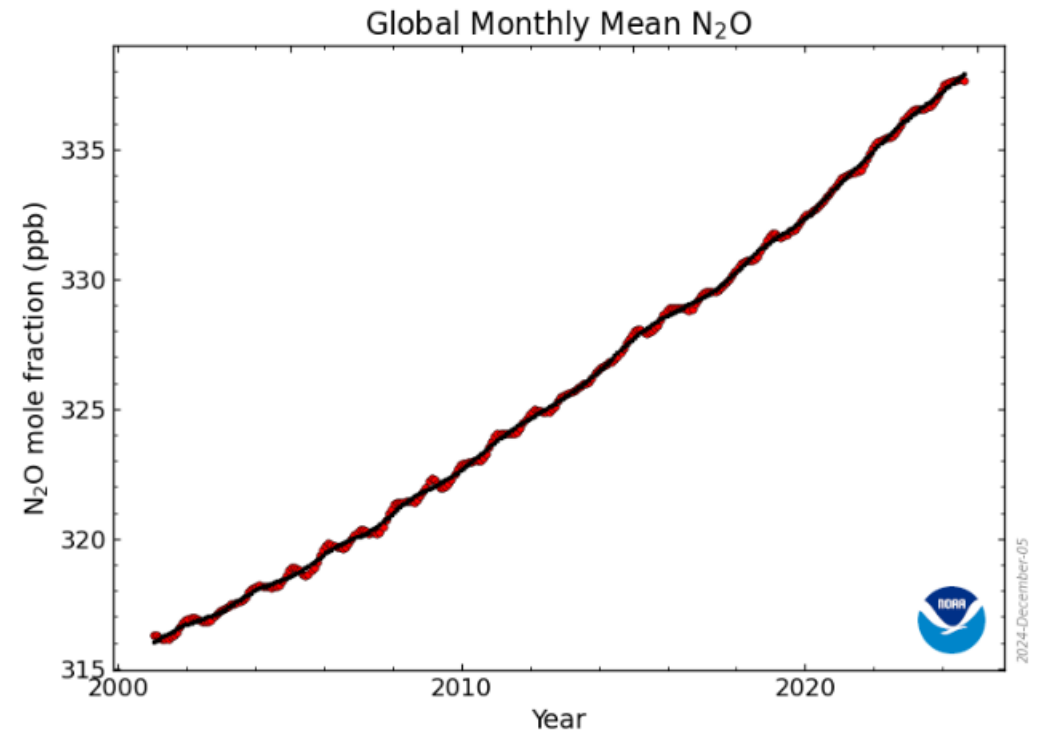
GASES DE EFECTO INVERNADERO

Óxido nitroso (N_2O)



BYJU'S
The Learning App

© Byjus.com

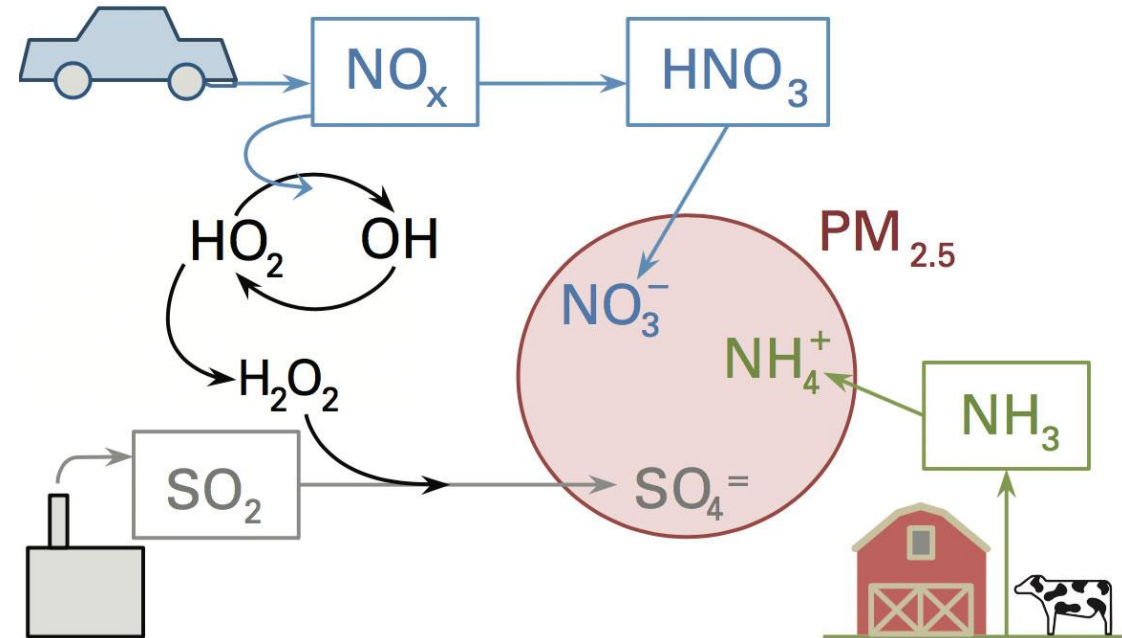


CONTAMINANTES PRECURSORES

Amoniaco (NH_3)

Sistemas SCR (diésel)

TWC (gasolina)



CONTAMINANTES CLIMÁTICOS DE VIDA CORTA

SUBSTANCE	ANTHROPOGENIC SOURCES	LIFETIME IN ATMOSPHERE	LOCAL REGIONAL GLOBAL
			IMPAIRS/MITIGATION
BLACK CARBON (BC)		DAYS	
METHANE (CH ₄)		12 YEARS	
TROPOSPHERIC OZONE (O ₃)		WEEKS	
HYDROFLUORO-CARBONS (HFCs)		15 YEARS (WEIGHTED BY USAGE)	

Fuente: CCAC



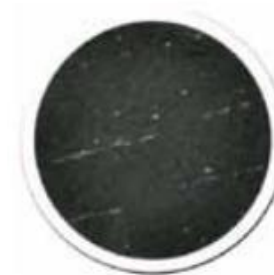
CONTAMINANTES CLIMÁTICOS DE VIDA CORTA

Carbono Negro

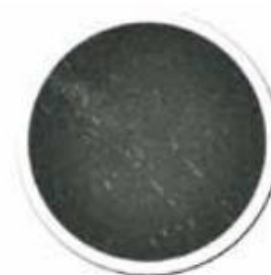
PM2.5

Carbono negro

Carbono orgánico



No retrofit system
Uncontrolled Diesel Exhaust



Retrofitted with
Diesel Oxidation Catalyst (DOC)
(Level 1)

Old technology
Little black carbon removal
Little ultrafine PM removal
Does not remove lube oil ash



Retrofitted with
Partial Filter
(Level 2)

Little black carbon removal
Little ultrafine PM removal
Does not remove lube oil ash



Retrofitted with
Diesel Particulate Filter (DPF)
(Level 3)

New Technology
Used on all new US trucks since 2007
>85% black carbon removal
>85% ultrafine PM removal
>85% lube oil ash removal

https://www.ccacoalition.org/sites/default/files/resources//2011_integrated-assessment-SUMMARY_UNEP-WMO.pdf

