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Global carbon dioxide emissions set to reach all time high

Global fossil carbon dioxide (CO₂) emissions are projected to rise in 2019 to a record high of 36.8 billion tonnes as outlined in the 14th annual Global Carbon Budget, released today at the United Nations Conference of the Parties (COP25) in Madrid.

This figure translates to a 200 million tonne increase in global carbon dioxide emissions since 2018, where carbon dioxide emissions rose to 36.6 billion tonnes.

The Budget reported that emissions grew at a slower rate over 2018-19 at 0.6 per cent (range -0.2 per cent to +1.5 per cent) in comparison to the last few years, with +1.5 per cent growth in 2017 and +2.1 per cent growth in 2018.

Executive Director of the Global Carbon Budget and Principal Research Scientist at CSIRO's Climate Science Centre, and an author of the Global Carbon Budget, Dr Pep Canadell, said that this year's slower growth rate can be explained by declining coal use in the United States and the European Union, weaker economic growth globally and lower growth in electricity demand in China.

Authors of the report found that global coal emissions are expected to decline by 0.9 per cent in 2019.

"While a slower global emissions growth rate indicates positive progress, there are some concerning findings," Dr Canadell said.

"We are witnessing a shift in the dominance of emissions sources - coal emissions are trending down, but oil emissions continue to grow, and natural gas emissions are fast accelerating."

According to the report, global CO₂ emissions from coal use fluctuated over the past decade, in some years offsetting all or part of the steadier growth in oil and natural gas usage that had continued unabated.

"Despite the promising slowdown of coal in a number of parts of the world, namely the US and Europe, combined CO₂ emissions from coal, oil and natural gas usage continue to rise," Dr Canadell said.

Land transport accounted for 50 per cent of emissions use globally and grew at +1.8 per cent per year in the past decade as a result of growth in demand for transport services.

"There has been uptake of low-carbon technologies around the world including solar and wind power, and electric vehicles, but the demand for energy is outpacing development - so these technologies are generally meeting new demand rather than replacing CO₂ emitting technologies, and that's particularly the case in developing countries," Dr Canadell said.

"The fact remains that the world is currently on track for a high emissions pathway and we need to decrease emissions to net zero globally by the middle of this century to stop further warming of the planet."

CSIRO has a comprehensive portfolio of research and development areas working to develop renewable and low emissions technologies which could potentially help to tackle emissions in Australia as well as globally.

CSIRO's portfolio of research includes technologies such as electric and hydrogen vehicles and carbon capture and storage technologies. CSIRO also provides pathways for industry to adopt technologies at a commercial scale.

About the Global Carbon Budget

[The Global Carbon Budget](#) is produced annually by the Global Carbon Project (GCP), with a global consortium of 58 research institutions from around the world. The GCP is a global research project of Future Earth and a scientific partner of the World Climate Research Program (WCRP) with GCP's international Project office hosted by CSIRO and partly funded by the NESP Earth Systems and Climate Change (ESCC) Hub.

The Global Carbon Budget is a comprehensive global analysis that provides the latest assessment of the global carbon cycle, including anthropogenic carbon dioxide emissions, and their redistribution among the atmosphere, ocean and terrestrial biosphere. It is produced through peer-reviewed scientific papers.