Frequently Asked Questions (FAQs)

Chapter 2: Emissions trends and drivers

FAQ 2.1 Are emissions still increasing or are they falling?

Global greenhouse gas (GHG) emissions continued to rise and reached 59±6.6 $GtCO_2$-eq in 2019, although the rate of growth has fallen compared to the previous decade. Still, emissions were higher than at any point in human history before**.** Emissions were around 12% and 54% higher than in 2010 and 1990, respectively. Average annual GHG emissions for 2009–2019 were higher compared to the periods 2000–2009 and 1990–1999, respectively. GHG emission growth slowed since 2010: while average annual GHG emission growth was 2.1% between 2000 and 2010, it was only 1.3% for 2010–2019. In order to stop the temperature increase, however, net emissions must be zero.

FAQ 2.2 Are there countries that have reduced emissions and grown economically at the same time?

About 24 countries that have reduced territorial CO_2 and GHG emissions for more than 10 years. Uncertainties in emission levels and changes over time prevents a precise assessment in some country cases. In the short observation period of 2010–2015, 43 out of 166 countries have achieved absolute decoupling of consumption-based CO_2 emissions from economic growth, which means that these countries experienced GDP growth while their emissions have stabilised or declined. A group of developed countries, such as some EU countries and the United States, and some developing countries, such as Cuba, have successfully achieved an absolute decoupling of consumption-based CO_2 emissions and GDP growth. Decoupling has been achieved at various levels of per capita income and per capita emissions. Overall, the absolute reduction in annual emissions achieved by some countries has been outweighed by growth in emissions elsewhere in the world.

FAQ 2.3 How much time do we have to act to keep global warming below 1.5 degrees?

If global CO_2 emissions continue at current rates, the remaining carbon budget for keeping warming to 1.5°C will likely be exhausted before 2030. Between 1850 and 2019, total cumulative CO_2 emissions from the fossil fuel industry (FFI) and agriculture, forestry, and other land use (AFOLU) were 2400 (±240 $GtCO_2$). Of these, about 410±30 $GtCO_2$ were added since 2010. This is about the same size as the remaining carbon budget for keeping global warming to 1.5°C and between one third and half the 1150±220 (1350, 1700) $GtCO_2$ for limiting global warming below 2°C with a 67% (50%, 33%) probability, respectively (Canadell et al., 2021). At current (2019) rates of emissions, it would only take 8 (2-15) and 25 (18-35) years to emit the equivalent amount of CO_2 for a 67th percentile 1.5°C and 2°C remaining carbon budget, respectively. This highlights the dependence of 1.5°C pathways on the availability of substantial CO_2 removal capacities, as discussed in chapters 3, 4, and 12, but also Section 2.7 of this chapter.