Key indicators to track current progress and future ambition of the Paris Agreement

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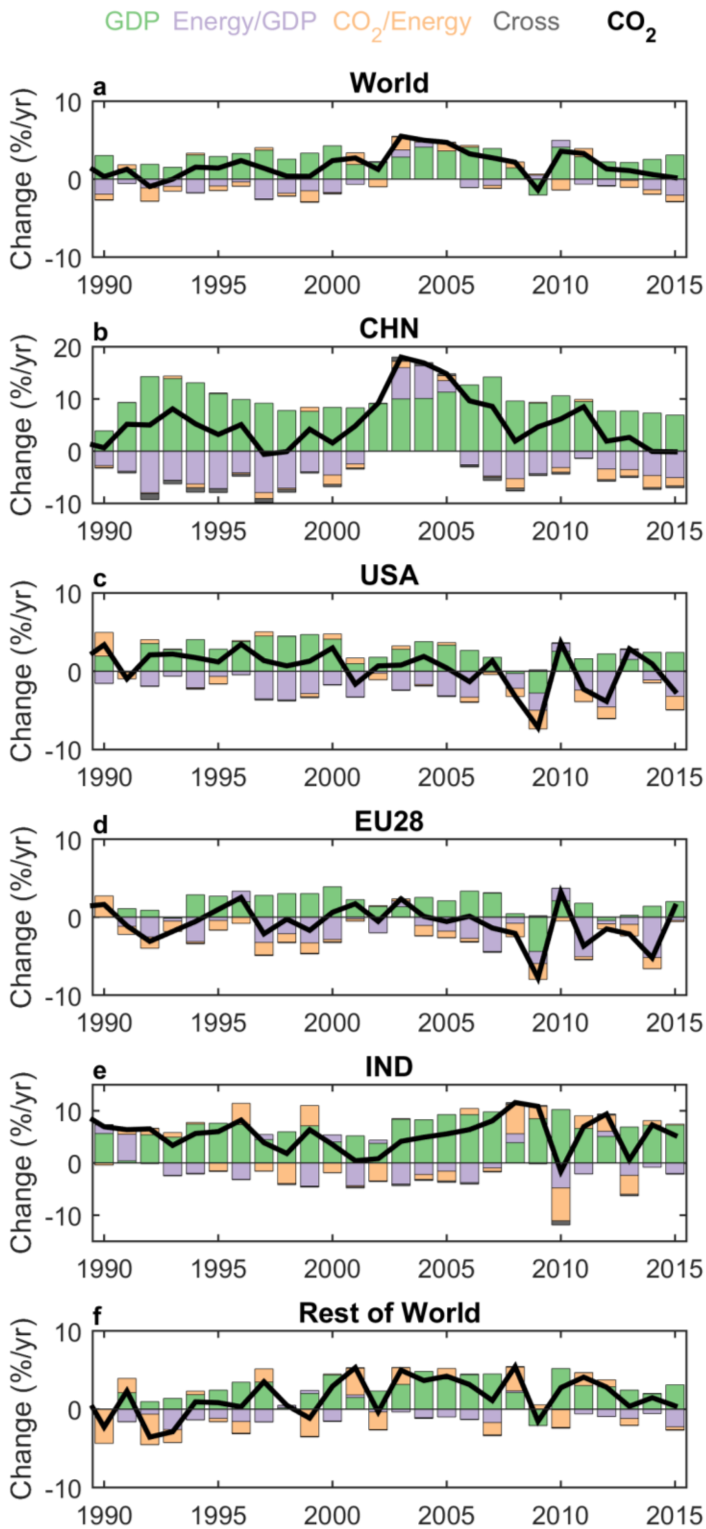
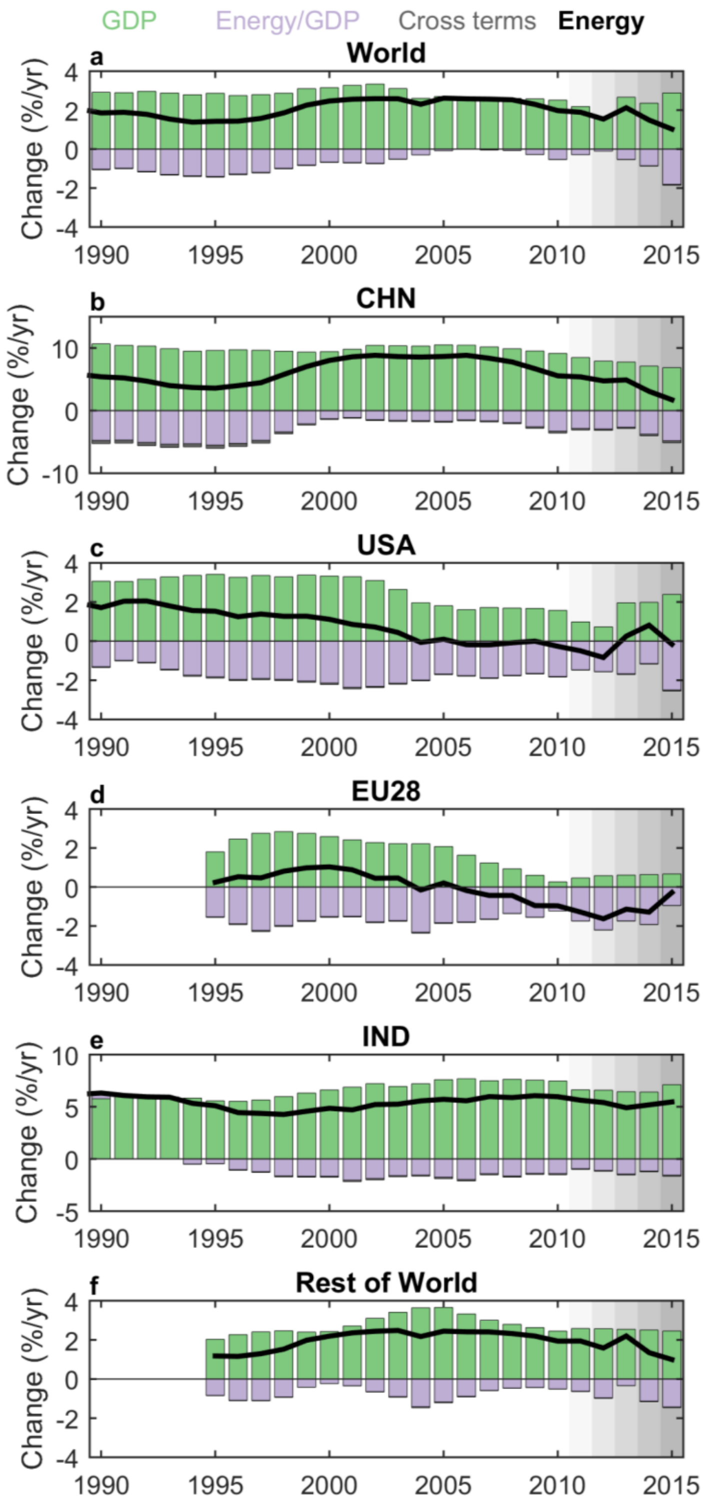
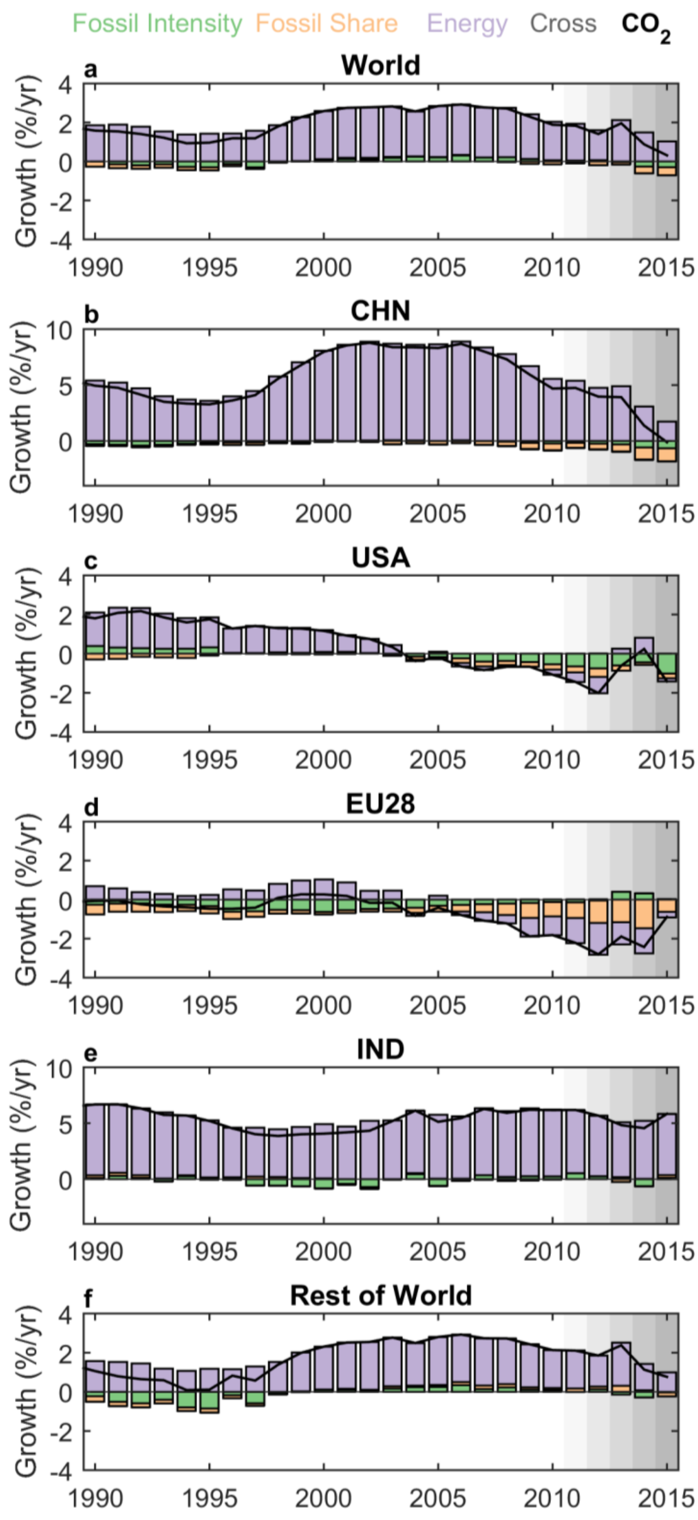
Supplementary Figures



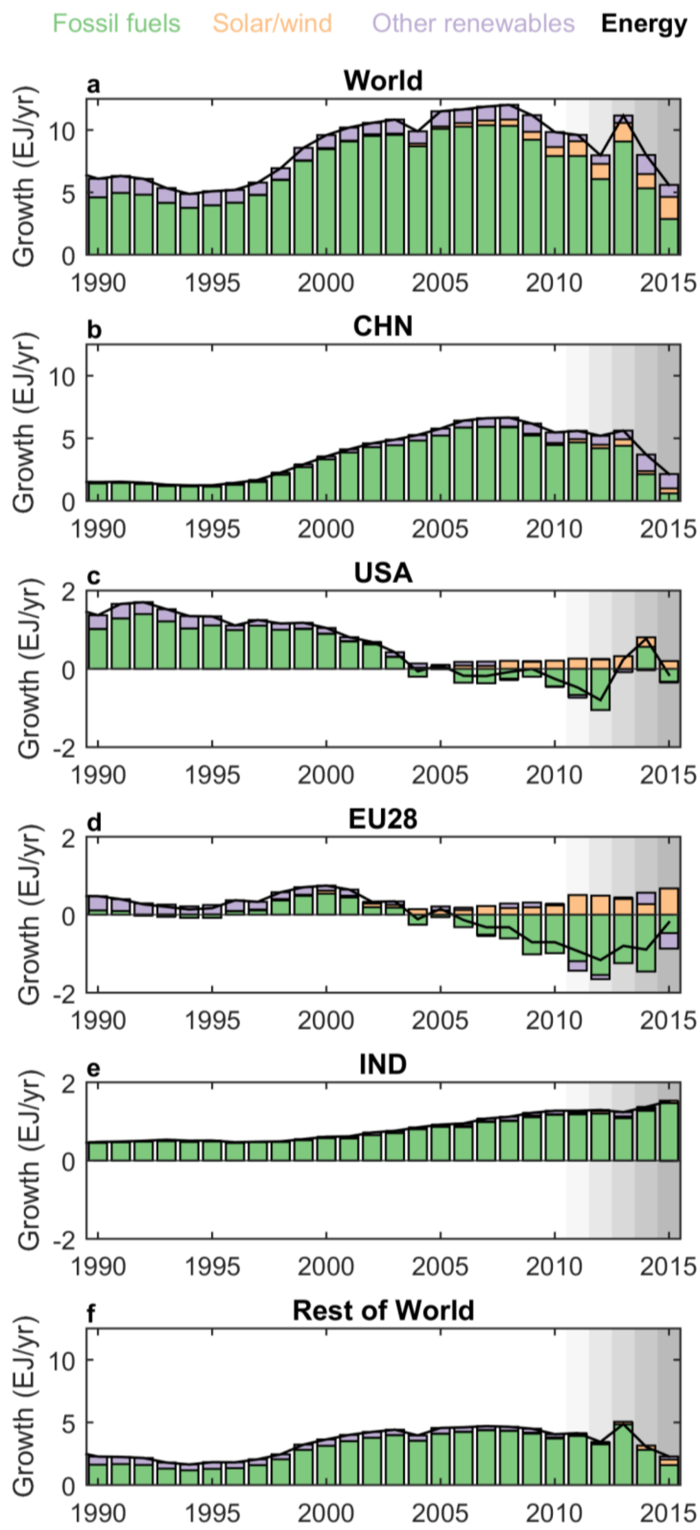
*Supplementary Figure 1: A Kaya Identity decomposition of CO_2 emissions and its immediate drivers (Levels 1 & 2 in Figure 1) for the world (**a**), China (**b**), USA (**c**), EU28 (**d**), India (**e**), and the rest of the World (**f**); note the varying y-axes. In contrast to Figure 2 (main article), the data has not been smoothed. Growth in GDP exerts upward pressure on emissions, energy efficiency downward pressure, and in recent years, carbon intensity downward pressure. "Cross" is a negligible interaction term (see Methods).*



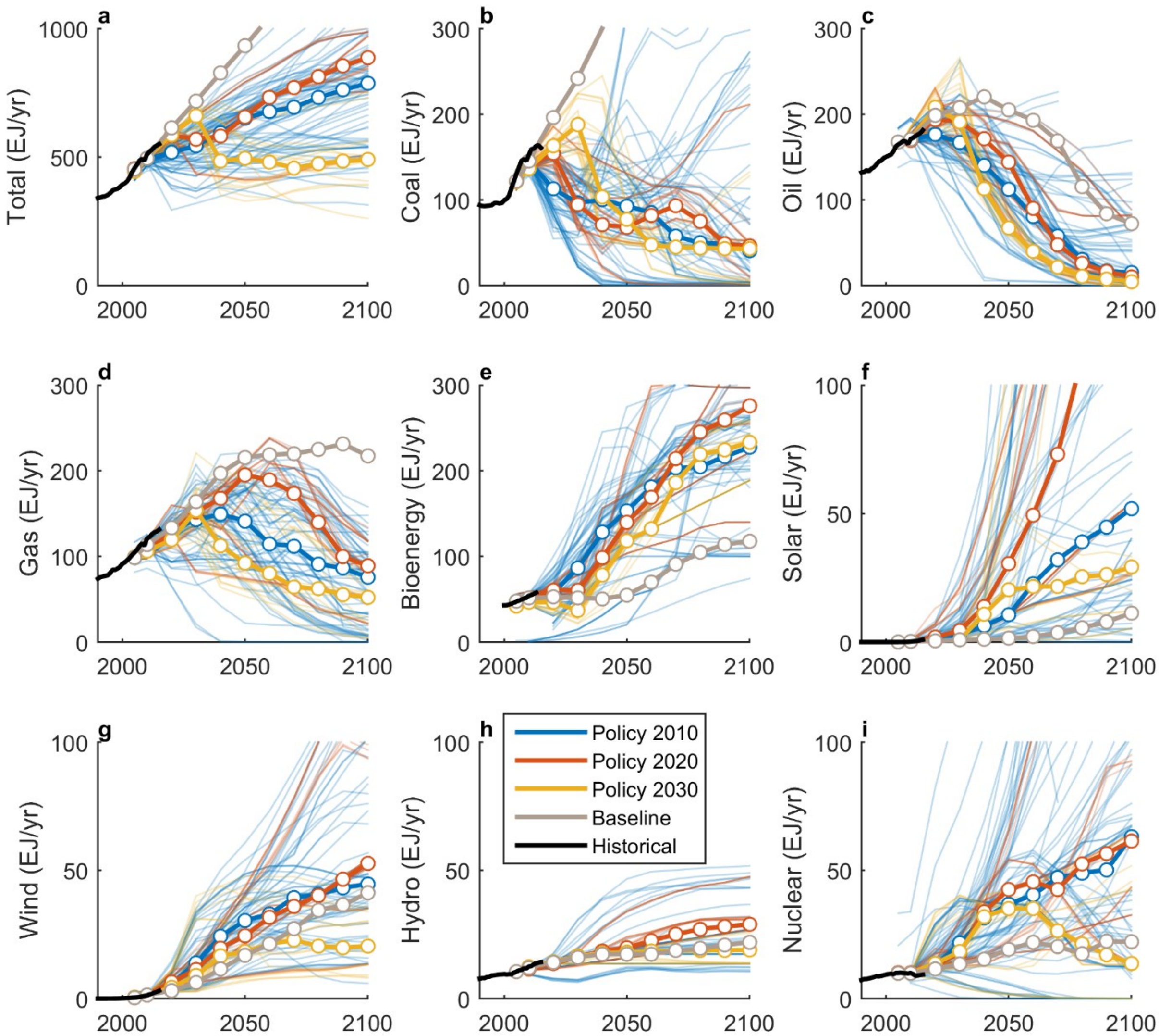
*Supplementary Figure 2: A Kaya decomposition of energy into GDP and Energy/GDP for the world (**a**), China (**b**), USA (**c**), EU28 (**d**), India (**e**), and the rest of the World (**f**); note the varying y-axes. The data has been smoothed with a 11-year window to show longer term trends, and the grey shading from 2010-2015 represents a diminishing window length as 2015 is approached. The missing data for the EU before 1995 is since there is no data before 1990. "Cross" is a negligible interaction term (see Methods). The recent declines in energy use have often related to declines in current GDP growth compared to earlier time periods, though Energy/GDP continually helps reduce energy use related to GDP growth.*



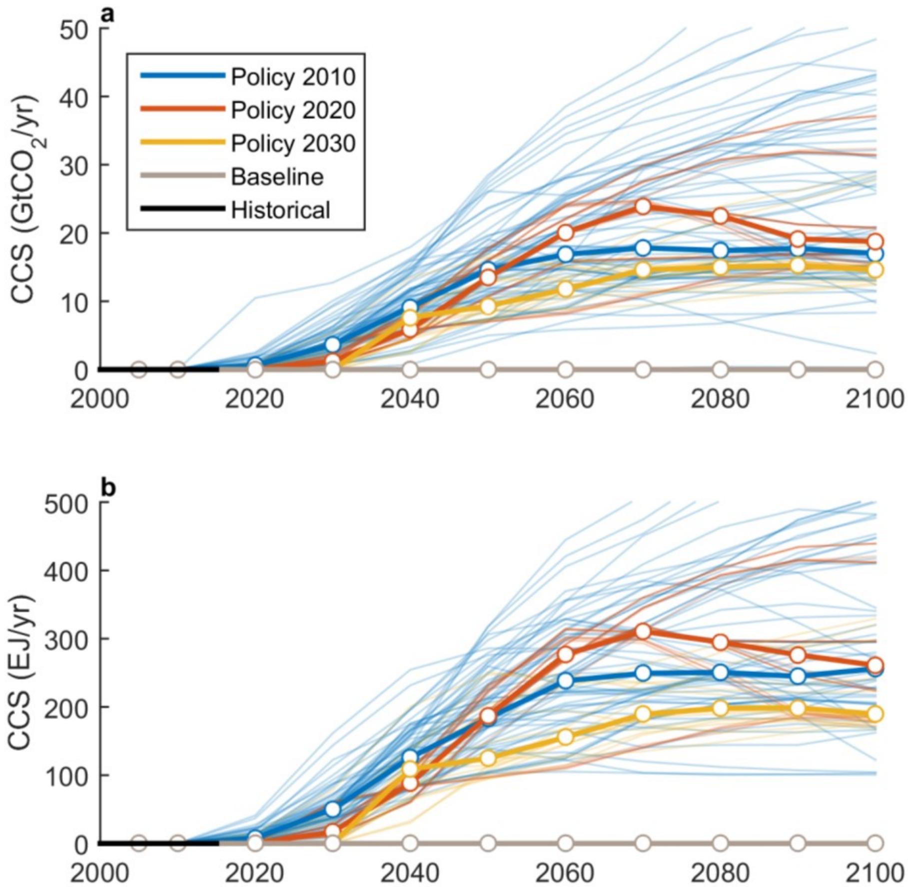
*Supplementary Figure 3: A Kaya decomposition of CO_2 into energy, the fossil intensity of energy, and the share of fossil energy in energy use for the world (**a**), China (**b**), USA (**c**), EU28 (**d**), India (**e**), and the rest of the World (**f**); note the varying y-axes. This modified version of Figure 2 removes GDP to highlight the key role of energy, but includes a decomposition of the carbon intensity (Figure 4). The data has been smoothed with a 11-year window to show longer term trends, and the grey shading from 2010-2015 represents a diminishing window length as 2015 is approached. Changes in energy use tend to have a dominant effect over the fossil intensity of energy use and the share of fossil energy in energy use.*



*Supplementary Figure 4: The annual growth in energy use, split between fossil (coal, oil, gas) and non-fossil (solar, wind, hydro, nuclear) for the world (**a**), China (**b**), USA (**c**), EU28 (**d**), India (**e**), and the rest of the World (**f**); note the varying y-axes. The data has been smoothed with a 11-year window to show longer term trends, and the grey shading from 2010-2015 represents a diminishing window length as 2015 is approached. "Cross" is a negligible interaction term (see Methods). The growth was dominated by fossil fuels in the 2000's, primarily China, and despite strong declines, fossil fuels still dominate in recent years. Hence, the decrease in fossil share is due to a decrease in fossil fuels and not an increase in renewables.*



Supplementary Figure 5: Historical trends and future pathways for the main energy carriers in 2°C scenarios. All panels show the historical period (black), the 2°C scenarios assessed in AR5, and the median of the associated baselines (brown). The 116 2°C scenarios are split into different categories with global climate policies starting in 2010 (blue), 2020 (red), and 2030 (orange). The light lines are individual scenarios and the dark with white markers medians. Bioenergy data from non-commercial sources is not available in the BP Statistical Review of World Energy, and we use data from the International Energy Agency.



Supplementary Figure 6: Historical trends and future pathways for Carbon Capture and Storage (CCS on fossil, bioenergy, industry sources) in 2°C scenarios. Both panels show the historical period[29] (black), the 2°C scenarios assessed in AR5, and the median of the associated baselines (brown). The 116 2°C scenarios are split into different categories with global climate policies starting in 2010 (blue), 2020 (red), and 2030 (orange). The light lines are individual scenarios and the dark with white markers medians. On the assumption that one CCS facility captures and stores 1MtCO_2/yr, about 4000 facilities would be needed by 2030 if climate policies start in 2010.