Avoided emissions, wind+solar vs CCS, 20 Nov 2026 - Methodology note:

We used power sector generation and emissions data from Ember for 2000-2025.[1] To build the counterfactual where wind and solar deployment did not take place, we assume that the annual generation from wind and solar would have been made instead by coal, oil, and gas, in accordance with the generation shares in that year. We estimate the additional emissions by using global average emissions factors. This is simplified analysis which does not consider the regions in which wind and solar deployment happened, and the specific electricity mix in each country. Other analysis which has taken a more regional approach provides similar results [2, 3, 4].

CCUS capacities are taken from the IEA CCUS Projects Database 2026.[5] Only projects which are listed as operational, suspended, or decommissioned are included. Transport, Storage and Transport and Storage projects are not included to avoid double-counting.

[1] Ember (2026). Electricity Data Explorer.

[2] Zeke Hausfather (2026) – A world without solar and wind.

[3] Ember (2026) – Global Electricity Review 2026

[4] Giada Caniglia (2026). Wind and solar CO_2 savings: 24 Gt avoided in twenty years. Raw Science. RS-2026-2914.

[5] IEA (2026). CCUS Projects Database, IEA. Paris.