“One year on from the global agreement at COP26 to phase down coal, the lack of big announcements and some backtracking is creating nervousness that we aren’t making progress on coal. But the Great Clean Energy Acceleration is underway. Clean electrons are already close to meeting the global growth in electricity demand, and then they are ready to come after coal. We are at the beginning of a truly coal-to-clean revolution.”

Dave Jones
Global lead, Ember

Read our pre-COP briefing: “Coal phasedown” a year on from COP26

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Global Electricity Trends 2022

The global transition from fossil fuels to clean electricity is accelerating - but not yet at the pace required to put the world on a pathway compatible with 1.5C.

- Wind and solar hit a tenth of global electricity in 2021. In total, clean electricity generated 38% of the world’s electricity in 2021, more than coal (36%).
- In the first half of 2022, renewables met all electricity demand growth, halting fossil fuels. We are getting closer to a tipping point, where clean electricity – led by wind and solar – will meet all future electricity demand growth, and thus fossil fuel power generation peaks.
- But electricity generation from fossil fuels need to rapidly decline - not just plateau. The IPCC report published this year showed that global unabated coal power needs to fall by 87% in the next 9 years.

Explore more global and national trends in our Data Explorer

Europe

The energy crisis in the wake of Russia’s war has pushed Europe towards a fast energy transition. While emergency measures focus on securing supply through the winter, Europe is making plans to permanently move to clean energy.

- EU countries have announced more ambitious power sector targets in response to the gas crisis and the Russian invasion, accelerating towards clean power by 2035.
- Renewables are already paying off. Record wind and solar power in the EU this year avoided billions in gas costs. Turkey has also seen wind and solar pay off this year.
- Low hydro and nuclear output has put a strain on the EU’s power supply as it rapidly ditches Russian gas, forcing it to rely on coal as a temporary measure while it scales up clean power. But returns to coal remain limited and no country has backtracked on a 2030 coal exit.
Asia

- **China** leads the world in solar and wind. In the first half of 2022, China’s rise in wind and solar generation was able to meet 92% of its electricity demand rise, so fossil fuel power fell 3%, rather than rise by 1%.

- **India** has achieved 66% of the 2022 target of 175 GW renewables, but it is unlikely for India to reach this target by the end of this year. India would need to install renewables 2.5 times faster to meet its 2030 target.

- **Japan** and **South Korea** hit solar power records in May 2022. However, Japan and South Korea still remain highly reliant on fossil fuels to generate more than half of their electricity needs.

- **Solar and wind generated only 4%** of the ASEAN 5’s electricity in 2021 — **Indonesia, Malaysia, the Philippines, Thailand and Viet Nam**. The latest energy plans would bring the share of solar and wind only up to 11% of the ASEAN 5’s total electricity supply by 2030.

“China is embracing the challenge of decarbonising the world’s second-largest economy in a serious manner. After years of extraordinary growth in clean energy, the 1+N policy framework released last year signifies the country’s ambitions to transform the whole economy towards a carbon neutral future. In the power sector, a major structural shift has already taken place in the past decade, with an almost two-fold growth in wind, solar and hydro power. The recent power crisis has given additional immediacy for China to expedite the process of rebuilding its power system around clean energy.”

**Dr Muyi Yang**
Senior analyst, Ember
Coal Mine Methane

- Coal mines are the world’s biggest source of energy sector methane, more than oil or gas.

- Among top coal mine methane emitters, the EU, US, Indonesia - and recently Australia - have already signed the Global Methane Pledge, while China, Russia and India have not.

- Australia could reduce its total annual methane emissions by 18% by 2030 from coal mines alone, delivering two-thirds of its commitment to the Global Methane Pledge.

“The Australian Government must build on its commitment by establishing a national plan to reduce methane rapidly, prioritizing action to reduce emissions from coal and gas.

Coal mines offer the cheapest way to cut methane fast. But Australia may actually end up with higher methane emissions if it doesn’t change course. Without improved monitoring, Australia is flying blind on how big its methane problem is. Moreover, plans to expand coal mining would definitely push Australia in the wrong direction.”

Dr Sabina Assan  
Methane analyst, Ember