

The long haul

Everything about climate change may seem grim. It isn't

The fight for a stable climate will be fought using technology



Photograph: Reuters

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If the FIELD of global warming seems to offer little that is new, there is good reason. Very little in [climate change](#) is actually changing. Not every year is warmer than the previous one, as this year is; not every year sets a global temperature record, as this one will. But the trend is inexorable.

With each of these years come familiar disasters, terrible for those affected, frightening—and sometimes guiltily fascinating—to those looking on. This year it was flooding in Brazil, Nepal, Spain and elsewhere; heatwaves first in Asia and the Sahel, and then America and Mexico. Autumn brings the annual rounds of diplomacy at the UN General Assembly and the inevitable diplomatic-roadshow-cum-trade-fair for the climate: COP, held this year in Baku, Azerbaijan's capital.

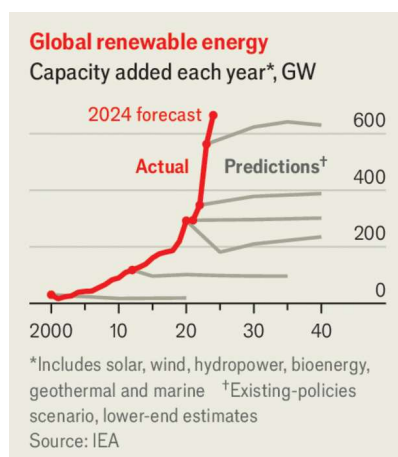


Chart: The Economist

True, there are novelties. The climate establishment [throws up its arms](#) at the re-election of Donald Trump, and it has its reasons: his second term is unlikely to be good for Americans afflicted by climate-related disasters, or climate scientists seeking funds. American emissions may rise, diplomatic engagement will fall. But graphs of global temperature and global emissions do not respond to shifts in administration in single countries. All remains as it is.

One final fixed feature, though, inspires hope rather than dread or resignation. Every year renewables get cheaper—especially solar panels; every year the installed base grows. Last year China added more solar

capacity at home than the whole world could boast in 2015, when the Paris agreement was signed. As roll-outs get bigger, prices drop lower and larger roll-outs become feasible. This is the change that you can rely on. It provides reason to believe that the world is not as stuck as it seems. Emissions can and will fall.

Technology has always been a vital part of the fight to regain control over the climate. At the moment it is close to the whole story. Economic modelling has routinely underestimated the rate at which solar panels, batteries and wind turbines can get cheaper. That is one of the reasons why, as our Briefing reports, estimates of the cost of decarbonising the energy system are routinely too high. The difference between the annual investment needed to meet new energy demand with clean technology and without it appears to be under 1% of all countries' GDP.

Acknowledging the centrality of technology does not mean simply leaving it to get on with the job. The history of energy shows that new technologies do not sweep old ones away. They tend to be additions, not replacements, and often provide [new ways](#) of using old fuels. To get a more thorough displacement this time means rearranging the world so that renewables make even more sense.

Grids need to be expanded to the sites where these new sources of energy are best exploited. They need to be re-engineered, through storage and demand management, to deal better with renewables' intermittency. Grids must also be ready to take on new sources of constant power. Ambitious schemes to achieve these goals, like those of [Ed Miliband](#), Britain's minister for climate change, are welcome. But they are not enough.

A disproportionate share of the necessary technology comes from China. A huge internal market, a lack of domestic oil and gas, world-class manufacturing networks and lavish subsidies have seen it grow into the [dominant force](#) in solar panels, batteries, electric vehicles and more. If the transition to a clean-energy world is to be cheap, these goods need to be able to find all the markets they can. A global trade war would do terrible damage.

Poor countries in which capital is costly need help. Renewables have higher capital costs and lower operating costs than technologies which have to buy fuel, and that hurts people without ready access to finance. Rich countries have moral and pragmatic reasons to provide financial help to the global south. They could, for example, guarantee loans so as to lower their cost. There is also a case for programmes to help countries ditch coal, the dirtiest fuel. Alas, the "Just Energy Transition Partnerships" meant to bring this about [have not lived up to their promise](#).

One cause of inertia is that abandoning coal does grave harm to local populations and to vested interests; penny-pinching by donors does not help either. Now that alternatives to coal are available, emissions pricing should be a useful additional tool. But there is an urgent need for other measures, too.

Getting these things right will hasten the day when emissions at last start to fall; it should also speed up the rate at which that fall occurs. This will not happen fast enough to meet the 1.5°C limit envisioned in the Paris agreement; but it might yet keep the world below 2°C. This is not ideal. There is a big difference between the two temperatures in terms of risk, damage and suffering, and if the bill for mitigation is often exaggerated, that for adaptation is ignored. The world needs to face those further challenges head on. And the fatalistic sense that nothing can change must itself be changed. ■