

# The magnitude of the net zero task

Just 20% of world energy is delivered as electricity, and just 30% of that electricity comes from wind, solar and hydro power as renewables. That means that just 6% of the current world energy takes the form of renewable electricity, so beloved by the campaigners for an early and energetic move to net zero. To get to net zero China and India, the two world giants still increasing their CO<sub>2</sub> output need to go through major changes. To get there the bulk of energy currently burned in petrol and diesel engines, in jet engines, in domestic gas and solid fuel heating systems and powering most of the world's factories needs to be converted.

Those who say the world can easily switch over to renewables in the form of solar and wind power need to understand the magnitude of the ask. They need to tell us where and when there will be a massive expansion of electricity grids to take all this extra power. Presumably we will need three or four times the present miles of cable and numbers of pylons. They need to say how most people and businesses will be persuaded to switch to heat pumps, electric cars and electric factories and how they will afford this. They need to tell us what the CO<sub>2</sub> impact will be of making all the things for this massive transition, and how the West will gain from this all the time China has cornered the markets in rare earths, minerals for batteries and the manufacture of EVs, solar panels and turbines.

If we are to rely more on renewables we need to know how they will handle periods of no wind, low sun power and an absence of water in hydro schemes. We need to know whether they will go for making plenty of hydrogen and its derivatives out of renewable energy so we will have synthetic fuels for our transport and heating? Will they want to up the percentage of green gas or liquid used in transport fuels and domestic heating or do they really think there can be the conversion of most to electric equipment|?

This all has to be practical and affordable. It requires huge buy in by billions of people, and needs them to have the capital to replace all their current equipment. People will want cheaper and more practical proposals than a Tesla and a heat pump.