

## Problems with green products- do they really cut CO 2?

Many people who accept the science of climate change do not buy electric cars and heat pumps because they do not see how that lowers CO 2. The establishment and the main parties all hold the same strange idea that forcing more people to buy these two products will in some way cut world CO 2. It is difficult to see how this would happen given current limits on renewable power.

If I bought a new electric car today and plugged it in to charge it the grid would need to call up more gas fuelled electricity to handle the needs of my recharger. We are usually using all the renewable power we can produce. If I spent a lot of money on a heat pump that too would require grid power to fuel it. How does it make sense to burn the gas in a distant power station and lose some of the energy in transmission when I could burn the gas directly in my home boiler and capture more of that energy as usable heat?

For the establishment view to work we need much more renewable power to power the grid, with reliable ways of storing green electricity for days and times when the wind is not blowing and the sun is not shining. We are some way off that situation. Before demanding we switch cars and heating systems government and the energy industry need to decide how to make storing renewable power economic. There would then be a long period of gaining permissions and implementing the work necessary to put in extra renewable capacity, extra grid capacity, and the approved ways of storing. These might be the production of green hydrogen with all the additional changes that would then require, or more large battery installations, or more pump storage systems. None of this is easy to do, quick to complete or cheap.

There also needs to be whole lifetime accounting. Ripping out a gas boiler and putting in a heat pump uses large amounts of energy to make or scrap or install or remove the products. Much of the work today is undertaken by suppliers using fossil fuels. This CO 2 needs to be accounted for. Early retirement of gas boilers or petrol cars may add to world CO 2 from the CO 2 involved in their replacement. It has been shown you would need to do a high mileage for a number of years in an electric car, recharging it from renewable sources, to cut overall CO 2 compared to running your older petrol car for longer.