

## Realistic pathways to 2050

### Lord Howell of Guildford (Con)

My Lords, I declare my energy interests in the register as chairman of the Windsor Energy Group and as adviser to Japanese climate and energy companies, and as a former Secretary of State for Energy.

It is always a great pleasure to follow the noble Lord, Lord Giddens, in his wise words. I am still trying to work out how his third way will enable us to escape from the paralysing ideologies of the present and past age. I expect I have a lot more thinking to do on that subject.

I have two considerations to add to this complex and major debate. They may sound rather technical, but I really believe that their omission is hampering our policy over the climate and our net-zero goals and the more serious contribution that we ought to be making to the global climate battle.

First, we hear amazingly little about the handling and potential of carbon dioxide in official plans and statements. What I think is missing is the understanding that CO<sub>2</sub> is not waste and a pollutant; it is in fact a resource. Far from being a substance that has to be stored in holes in the sea or suppressed at any cost, it is resource of enormous value. I have even heard it described by very well-primed authorities—particularly from the University of Swansea and a number of American universities—as “the new oil”. The reality is that CO<sub>2</sub> can replace the entire basis of the petrochemical industry. It can be converted into a vast range of inorganic materials, and can act as a feedstock for methanol and, if desired, ethanol—they of course are the basis of a vast part of the chemical and materials industries—and a variety of other catalytic processes. We have just been reminded that Asia is racing ahead in many ways in technology and indeed in living standards: Korean scientists have now found ways of converting CO<sub>2</sub> into hydrogen.

A major reset in policy thinking is demanded here, and I would like to hear from the Minister whether this is beginning. Carbon capture, and bringing down the cost of capture, from all industrial processes—the heat loss from industrial processes is enormous—is something we can all agree on; that is fine. There was little notice, but yesterday’s Budget funding of new carbon capture clusters is extremely welcome and a revival of an important area where we are falling miles

behind our competitors. But storage is much more controversial, and it is I think probably the wrong and negative emphasis. If we want to stop carbon adding to the thermal blanket round the earth, it can be put profitably to a thousand uses, all of which we should be aiming at. That is the first point I want to make that seems to have been missing from the debate.

Secondly, when it comes to hydrogen itself, there still seems to be deep confusion. Hydrogen is not so much an energy source as a vector in energy transformation. It is enormously plentiful and can be added into our entire gas grid at up to 40% dilution without any change either to the piping of our national gas grid, which is very extensive, or to actual gas boilers or cookers, with huge savings in conventional hydrocarbon burning. It can also be used directly as a longer-range transport fuel, and is probably superior to dragging around heavy batteries in electric vehicles. I am very doubtful whether the battery technology required to make the EV revolution happen is not going to come to a dead end. For one thing, hydrogen can be loaded like petrol and just as fast. It is no wonder that some police forces—South Wales Police among them—have decided to go over to hydrogen when they have to respond in seconds to emergencies instead of using battery-powered vehicles for which they might have to wait half an hour to be filled up and ready to go on the job. Besides which, the lithium, cobalt, copper and rare earths required in batteries all come from monopoly sources, such as China, Argentina, Bolivia, Chile, Congo, Indonesia and Serbia—potentially a new sort of OPEC that could be a good deal more threatening and less friendly than the present one that we have had to work with for the past 40 years.

It is true that hydrogen needs electrolysis and that needs lots of electricity, but that is the one thing of which we have a vast, unused surplus in this country, surrounded as we are by massive and excellent investment in offshore wind farms. We now often have to pay those wind farms to stop generating for long periods to prevent major destabilisation of the whole grid, which has already occurred once or twice. The mismatch in timing between our now enormous wind electricity output and normal daily power demands provides the perfect extra electricity source for massive hydrogen electrolysis.

I read the recent report mentioned by the noble Lord, Lord Browne, from the so-called Energy Systems Catapult—a government-sponsored organisation, I understand. It was spouting nonsense about the need to double or treble electric power output, with 20-plus new nuclear stations by 2050—actually, the *Times* said 32 new stations, with classic exaggeration—along with drastic reductions in the eating of meat and dairy and other scary and difficult disruptions. Indeed, the

report actually talked of the elimination of aviation and livestock products to get to the 2050 goal, all in my view adding up to the worst kind of fright, disincentive and discouragement to sensible and acceptable climate policies that will actually get us to the goals we want.

Of course, there is no silver bullet or single pathway to net zero or to really checking the growth of carbon particles in the atmosphere, but if the investment priorities go to carbon resource usage, and if plentiful hydrogen and major advances in efficient energy use are deployed—if those are the investment priorities—that is far the most promising way to actually get to net zero.

In the end, one has to ask what impact all our national efforts are actually having on worldwide climate change. Britain may be leading by example; I think it probably is, but who exactly is following? China is building coal-fired stations as never before—I am told there are 200 in central Asia and Africa along the belt and road routes—so there is not much example-following there. Not to focus on the real priorities, just to remain inward-looking, ignoring the really big emitters and the best investment priorities to prevent greenhouse gas accumulation—that really would betray the younger generation. Greta Thunberg is right about that, but if we continue to be led by the experts on present paths, then all I can say is that the real betrayers will not be the ones she thinks.

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