

The net zero 2035 target for electricity is not credible

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World leaders in setting targets

When it comes to net zero, the easy bit is announcing targets. It's a competitive business: who can come up with ever more ambitious targets? Politicians excel at it. Labour has trumped the Conservatives; it now has a 2030 net zero target for the power sector, beating the Conservatives' one of 2035.

The government has targets for banning the sale of petrol and diesel cars (by 2030) and gas-fired boilers (by 2035). The list includes more targets: targets for hydrogen production (by 2030) for 50GW of offshore wind (by 2030) and to quintuple solar (by 2035). Together these and associated policies are targeted to deliver a rather precise 480,000 jobs (by 2030). So thick and dense is the web of these targets that few people if any can even list them all.

The difficult bit is explaining how the targets are to be met. Despite yet another 1,000 pages from the government (re-) explaining its Net Zero Strategy,¹ none of these is credible without a plan to get from here to there, and there isn't a credible one. 2030 is less than 7 years away. The less exciting stuff about supply chains and car-charging networks does not bother the politicians, who keep coming up with these targets. They will not be in office by then, or can blame the other parties for failures, or even be dead by the time the reckoning comes.

Imagine taking a bet with Keir Starmer and his Shadow Cabinet colleagues that their 2030 power sector target will not be met. This might look like a racing certainty; there is, after all, virtually no chance that it will be, especially since Labour is also promising that the UK economy will by then be the fastest growing amongst the G7. Never mind

¹ HM Government (2023), "[Powering up Britain](#)"; "[Powering up Britain: The Net Zero Growth Plan](#)"; "[Powering up Britain: Energy Security Plan](#)"; 30th March.

that Labour does not control the economic policies of the other six members of the G7, and that economic growth is not controlled by governments.

But before rushing to make the bet, imagine all the excuses that Labour could make in 2030 for not reaching the target (presuming it has not been superseded by another target). Number 1 is the obvious one: blame the Tories for not setting up the conditions for success. By the time of the election, and of a possible Labour win, there will be just five years left. There will be at least one more general election before 2030. “World events” might intervene. China might invade Taiwan, and most of the net zero stuff comes from China: minerals, electric cars, solar panels and wind turbines. An embargo would be an interesting extra challenge.

All these targets are non-credible, in that none has a path to success in the incredible timescale that the political competition has mapped out. They could all be met, but that would require a national effort on a scale and speed not seen outside wartimes. Winning the targets-setting competition is not the same thing as winning the net zero race.

The 2035 target

Let's put aside Labour's non-credible 2030 gambit and focus on electricity and the government's 2035 target. To get from here to there requires a huge investment, in low-carbon electricity generation: nuclear, wind and solar. There will also possibly be a bit of carbon capture and storage (CCS) and some blue carbon hydrogen (so not really net zero and very energy-intensive).

The target will be in the context of higher electricity demand. This will come from the electrification of cars, heating and the digitalisation of the economy. Most things are electrifying. Slow progress on the first two will be a bonus for the power sector target – less demand to match. Weak economic growth and perhaps a really big recession at the national and global level would help too. Anything governments do to speed up the electrification of cars and heating and to speed up economic growth (to which all the main parties are committed as their highest priority) will make the 2035 target harder to meet.

Hardly ever mentioned when it comes to the low-carbon generation, the macroeconomic context is one in which the UK saves very little and runs a very big current-account deficit on the balance of payments. The UK economy depends upon the kindness of strangers to help us live beyond our means (we import a lot more than we export) and we need foreign savers to finance the huge net zero investment requirements. The 2035 net zero target is, in effect, a target for large-scale foreign (rather than domestic) investment.

That investment is in equipment that is overwhelmingly made abroad. Thus, it is a target for lots and lots of imports of foreign-made goods and foreign-produced and refined materials. Most comes from China, as noted above.

Obvious questions rarely asked

One obvious question is: who is going to pay for all these imports? And another is: why would foreigners invest in the UK? You will not find either seriously discussed in the 1,000 pages.

No answer is provided to the first question. It is largely ignored, but it won't go away. BREXIT has made exporting to pay for these additional net zero imports a whole lot harder. If anything, the UK's exports are weakening. The large major energy-intensive industries are falling away: steel, fertilisers, car manufacturing and even petrochemicals. The North Sea is being encouraged to close down, especially by Labour. Paying our way in the world looks harder and harder, just when we need all those kind strangers to help us out, and to be willing to sell us the minerals, turbines, batteries and solar panels for the great net zero transformation.

Scale here is important. The net zero target is conveniently one for *domestic* territorial emissions. It leaves out all the nasty carbon-intensive net zero materials and equipment that are imported too (and it leaves out most of DRAX's emissions). Making a solar panel in China is a very dirty activity, relying on a lot of coal (and sometimes Uighur forced labour). Chinese coal and steel go into making the wind turbines. Car batteries use a lot of cobalt, lithium, nickel and copper – all very carbon-intensive types of mining and on an enormous scale. Claiming that an electric car is “zero emissions” is largely a convenient fiction, true in only the narrowest sense. Next time you are minded to think

this, take a look at the cobalt mines in the Congo, or nickel refining in Russia. When you buy your pure green renewables energy and drive your zero-emissions car, look through the spin to the trail of emissions associated with the supply chains behind it. None of this is, of course, taken into account in the UK's net zero targets.

The net zero targets might be the biggest investment opportunity of the century, and the Skidmore Report² tells us with ludicrous precision that it might add up to 2% to GDP in 2050 (ludicrous because the Office of Budget Responsibility and the Bank of England struggle to forecast GDP six months ahead). But even if it is 2%, it is an investment opportunity for foreigners. The US Inflation Reduction Act, Infrastructure Act and Chips Act, and the EU package of measures in response, will inevitably leave the UK on the side-lines, late to the table and with little for power when it comes to subsidies and support.

Our second question is why these foreigners will want to invest in the UK's net zero opportunities. The answer must be that they believe that UK customers and UK taxpayers are going to pay them interest and dividends and pay back their capital – in other words, they must believe that these are all profitable investments. Take some of the investments in isolation, and this might be true. But in aggregate, will UK consumers and taxpayers be willing and able to pay? They were not willing to do so in 2022 or in the first half of 2023.

Recall that UK consumers like living beyond their means, and they don't like having to reduce consumption to make room for savings which could provide for investment. For the UK to make all the stuff itself, and mine and refine the minerals too, would take a lot of UK savings. There is no evidence that UK consumers are likely to oblige, and no evidence that politicians of either main party are about to make them do so.

Roll forward just 12 years to 2035 and ask how safe the foreign investments are going to be. Recall, too, that since we import a great deal more than we export (and the net zero programme makes this imbalance very much worse) and then think through the consequences for the exchange rate and hence the currency loss of value of those

² Skidmore, C. (2023), "[Mission Zero: Independent Review of Net Zero](#)", January.

foreign investments. Would you bet that UK citizens are going, either as consumers or taxpayers, to stump up the costs of all those foreign solar panels, wind turbines, car batteries and all the minerals that lie behind them?

Missing links: grids and network distribution

So far this is only about the electricity generation side and the cars and heat pumps. But what about the networks, the grid and local distribution systems that have to connect up all the new decentralised, low-energy-density and intermittent generation, and support decentralised generation and car-charging demands and heat pumps? It is bit late in 2023 to commission a report on how to do this, and to promise to decide by the end of the year. How exactly do you transform our networks in just 12 years (let alone Labour's six years), in sync with the investments in all the wind farms and solar panels?

A quick glance at the planning delays (often for very good reasons), the lack of an offshore grid for the wind farms (caused in considerable measure by OFGEM'S obsession with offshore competition in transmission on a bilateral and case-by-case basis), and the wild west of electric car-charging, and it's obvious that this will never be ready in time for 2035 without a lot of central direction. Regulatory periodic reviews of National Grid and of the distribution network operators (DNOs) have driven short-term business plans to meet the overarching objectives of keeping prices down (with affordable electricity a key objective of government and implicitly of OFGEM).

The latest iteration from OFGEM for the DNOs fudges this with 30+ uncertainty measures.³ The new networks review is an admission that the recent periodic reviews are inadequate to the task ahead. If the government (and Labour) really want to go for net zero for the power sector by 2035 or 2030, then the networks have to be invested in ahead of demand and at an incredibly fast rate. They have to be ahead of demand, and hence before 2035 – more like within 8–20 years from now.

³ See Helm, D. (2023), "[Energy network regulation failures and net zero](#)", 5th January.

How could it be done?

Let's be realistic. There is very little chance that the 2035 target will be met, and no chance on current policies. Reading between the hype and spin, that is the conclusion that emerges from reading the latest 1,000 pages updating the government's net zero strategy.

Why? No one is in charge. The obvious candidate – the proposed Future System Operator – is ill-conceived as a public corporation regulated by OFGEM, rather than a system architect and regulator, which should be in the public sector and acting as a government agency. This could be rectified, but it would require radical action. OFGEM is not fit for these purposes.

There would need to be direct coordination. There would need to be well-worked-out integrated plans for the component parts, and there would have to be *credible* commitment to the necessary supply chains. Vested interests would need to be faced down. A quick glance at policy failures on nuclear over the last 40 years suggests that the UK would find all this very challenging.

On top of this planning and coordination, and the institutional structures to make this happen, there is the question of costs and who funds all this. Funding, not financing, is the key word: finance follows funding, now and in the future, and funding comes from taxpayers and consumers. In the “bad old days” of nationalisation, investment was on a *pay-as-you-go* basis: current customers paid for current investment. There was no need for finance. Privatisation made finance the big game in town, because it moved to *pay-when-delivered*. But postponing payment does not make the funding problem go away.

To make net zero happen requires something politically unpalatable and unmentionable, or worse. It requires leadership that goes well beyond the simply non-credible and often ridiculous claims by our political leaders. Net zero is going to cost – a lot. It has to be paid for. The UK citizens are in for a series of shocks, even if sheltered by the likely fall in the price of gas over the medium and longer terms. Electric cars are not cheaper, heat pumps are not cheaper, and renewables and nuclear are not cheaper. If they were, they would happen anyway – no need for all the subsidies that their lobbyists keep clamouring for.

One day they might be cheaper, but at best not much before the 2035 deadline. All these net zero things are not going to be cheaper because the government says they will be. The “cheap energy” sales pitch jars against what is happening to customer bills, and this is not all caused by gas prices (which are now back to their European 10-year average). Look at the levies, the charges for supplier failures, the network costs and all the stuff that goes into the standing charges, look at the price of an electric car, a heat pump. Now add the (now rising) cost of another 40GW of offshore wind, of Hinkley and Sizewell. It is not good enough to simply assume that the costs for all the “good” stuff will just follow a sharp line downwards, whilst fossil-fuel prices will remain volatile and ever higher.

The citizens will have to pay the interest and dividends on all that foreign investment. The UK will have to face up to the changes needed to be productive and competitive and increase exports to pay for all the new imports required, or face a falling exchange rate. UK citizens will also have to save to invest, reducing consumption to put aside money for the great investment opportunity which the Skidmore Report claims net zero to be.

This is what achieving net zero really means. It means that we have to stop living beyond our means, and especially beyond our environmental means, and, as the ultimate polluters, we must pay for the pollution we are causing and save to invest too. That is what a sustainable economy looks like.

One way of seeing what all this means is to think through what our electricity bills would be if we reverted to the intergenerational bargain of the nationalised industries and *paid-as-we-go* for investment and faced a carbon tax to reflect the damage that our carbon-intensive lives cause. The UK is close to 80% dependent on fossil fuels for its energy (as is the rest of the world), and this is the same number as it was in 1970. We have not really started to decarbonise so far.

And if we really wanted to stop causing climate change, we would have to go beyond the territorial, net zero target, and include all the emissions we cause along the global supply chains – all the emissions from imported energy-intensive goods, from the solar panels and the wind turbines, and the car batteries, the lithium, cobalt, nickel, copper, steel, aluminium, fertilisers, and petrochemicals.

This is where the politicians across the spectrum would have to go, beyond simple spin and into really politically dangerous territory. The government promises affordable energy, and the cheapest wholesale prices in Europe by 2035. It is like a magic money tree: we can have all the investment and we will have cheaper energy too. If only this were true.

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