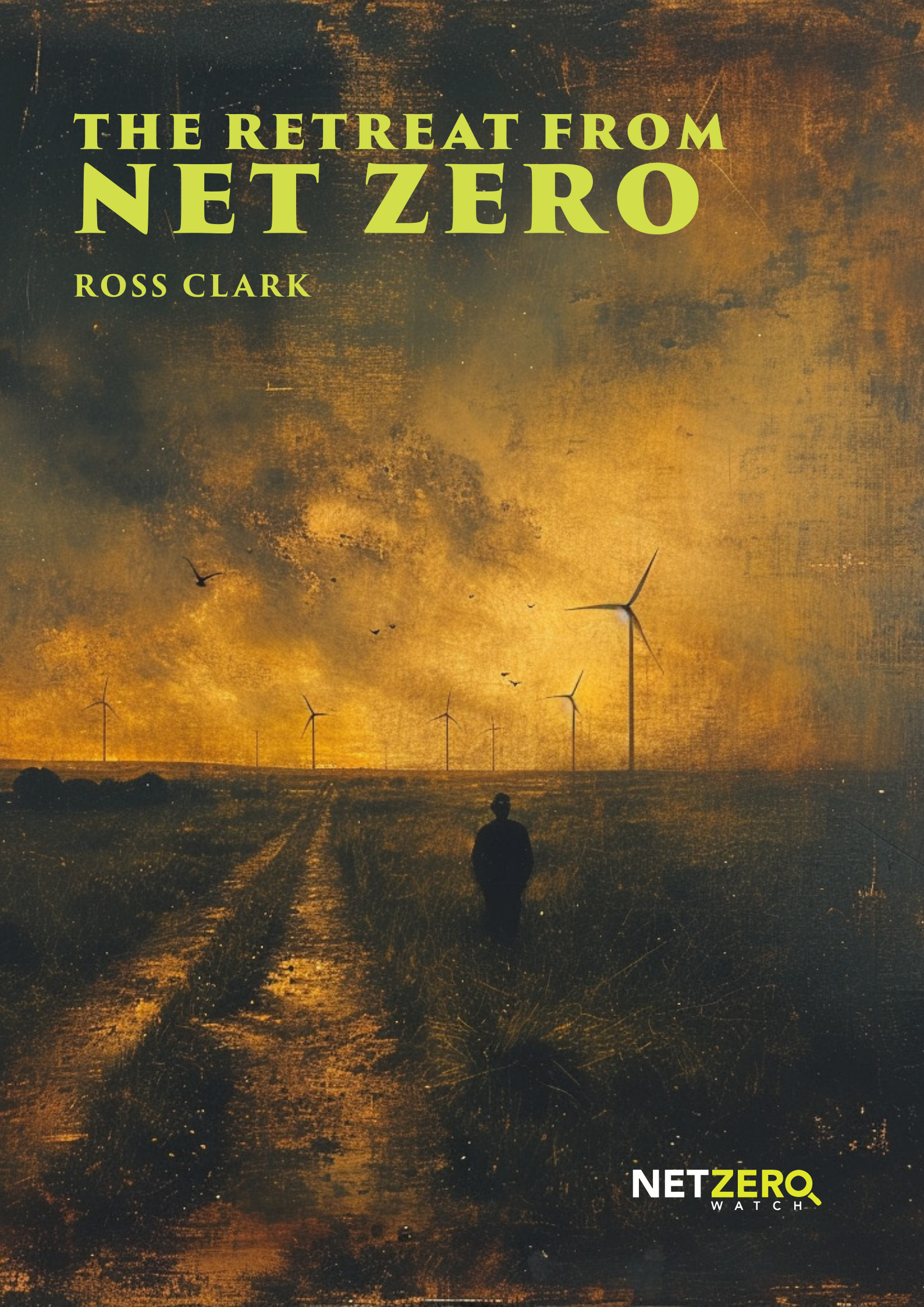


THE RETREAT FROM NET ZERO

ROSS CLARK



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About the author

Ross Clark is a leader writer and columnist at the Spectator as well as a frequent contributor to several national newspapers including the *Daily Telegraph*, Daily Mail and the Express. He is the author of several books including *The Denial*, a satirical novel on climate change, and *Not Zero: How an Irrational Target Will Impoverish You, Help China (and Won't Even Save the Planet)* 2023





Introduction

The UN meetings on climate change have become renowned for their platitudes, with national leaders falling over each other to say what desperate straits the world is in, how we must decarbonise ever faster – before returning to their home countries and putting economic development well ahead of their promises to cut emissions. But the president of COP28 in Dubai in December 2023, Sultan Al Jaber, was unusually frank. Al Jaber, who also serves as the chair of Abu Dhabi state oil corporation, ADNOC, which recently announced a \$150 billion investment to increase oil production by nearly 50 percent to 5 million barrels a day by 2027, appealed to former Irish President Mary Robinson: ‘show me a road map for the phase out of fossil fuel that allows for social, sustainable development...unless you want to take the world back into caves’.

Al Jaber was eviscerated for his comments, yet they were in tune with a silent majority. An analysis by the website Zero Tracker reveals that even countries with net zero targets are heavily resisting pressure to phase out exploration for and development of fossil fuel resources. There are 93 oil-producing countries that have net zero targets, but only six of them have plans to phase out oil. Only five out of 94 gas-producing countries with a net zero target have plans to phase out gas. As for coal-producing countries, only 65 of those with net zero targets have plans to stop production.¹

As always with COP meetings, the event ended with a communiqué promising that the world would try to ‘transition away’ from fossil fuels – which is a long way from agreeing to phase them out by a certain date, as many activists demanded. After two weeks and several hundred thousands of tonnes of carbon dioxide spewed out by private jets and the like, the 98,000 delegates who had signed up for COP28 had come up with nothing more than an empty promise.

In fact, the list of countries with plans to phase out fossil fuels is showing few signs of growing. The new government in New Zealand has just reneged on the previous administration’s pledge to do so. In Germany, Federal Economics Minister Robert Habeck recently announced that he may delay the country’s planned phase-out of coal by 2030 because of the energy crisis provoked by the invasion of Ukraine.

A little more subdued in criticism of Al Jaber was US climate envoy John Kerry, who said: ‘look, he’s gotta decide how he wants to phrase it, but the bottom line is this COP needs to be committed to phasing out all unabated fossil fuel.’ No wonder Kerry was a bit shy: during the conference, news came through that in September 2023 the US produced 13.2 million barrels of oil per day – more than any country had ever managed in history. Indeed, the US is fully engaged in a race with Gulf countries to get as much fossil fuel out of the ground as possible. In the US, the capacity for gas export

rose to 11.4 billion cubic feet per day in 2022, and is pursuing new capacity which would add a further 9.7 billion cubic feet per day.² Europeans shouldn't criticise the US, either – Kerry explained that a lot of the extra production was heading to Europe in the form of liquified natural gas (LNG) to make up for lost capacity from Russia.

There is scant sign of the whole world joining Britain in setting hard targets to achieving Net Zero greenhouse gas emissions – a task which would require far more than just the end of fossil fuels because it would have to involve the wholesale reinvention of agriculture, and well as industries such as steel, cement and fertilisers. When the House of Commons committed Britain to achieving Net Zero by 2050 – without even a vote – it was in the hope that it would inspire other countries to follow suit. How is that going? According to the 'Net Zero Scorecard' published by the Energy and Climate Intelligence Unit, 26 countries have so far legally committed themselves to a target of reaching net zero carbon emissions, mostly by 2050, although Germany and Sweden have a 2045 target, Iceland and Austria 2040 and Finland 2035.³ A further 52 countries have got as far as putting a net zero target in a policy document, while the rest haven't even got that far.

Notionally, the Net Zero Scorecard shows some signs of progress, in that the number of countries with a net zero target in law has increased from 17 in 2021 – even if many of these countries are pretty small-fry, such as Luxembourg and Fiji. Yet the reality is that the whole project has stalled. While no country has yet rowed back on its net zero target, many of the interim targets have begun to be relaxed, as governments realise the sheer impracticality and cost of reaching them. What looked like hard promises are evolving into rather weaker intentions. The unelected supranational bodies, such as the UN, are pushing harder than ever. But as the big targets loom ever larger in the windscreen, the governments that drive global climate policy are beginning to twitch on the steering wheel, ready to swerve.

Fossil fuel demand – never been higher

In September 2015 the then Governor of the Bank of England, Mark Carney, stood up at a dinner hosted by Lloyds of London and warned investors of an impending disaster. Fossil fuels, he warned, were going to become 'stranded assets', as the World turned to renewable energy. 'The exposure of UK investors, including insurance companies, to these shifts is potentially huge'; it could even 'destabilise markets'. What was needed, he said, was a 'climate disclosure task force' which could warn investors of a company's exposure to fossil fuels.⁴

So much for stranded assets. Eight years on, demand for fossil fuels has never been higher. In September 2023, reported the International Energy Agency, demand and supply of oil had reached a record 102 million barrels per day.⁵ While green pres-

sure groups such as Just Stop Oil rail against any new production, and UN Secretary General launched the COP28 climate conference by calling for a total end to the industry, there is little immediate sign of a declining appetite for fossil fuels. Environmentalists cheered when, on 1 January 2023, Lula da Silva regained the Brazilian presidency from Jair Bolsonaro, denounced by some as a climate change denier and general environmental vandal. Lula announced a target for the country to reach net zero by 2050 and promised to halt deforestation by 2028 – in which he seemed to show some progress in his early months in power. But at the same time he is massively expanding production from the recently-discovered ‘pre-salt’ reserves beneath the Atlantic, 100 miles off Rio de Janeiro. The state-controlled oil company Petrobras plans to increase production from 3 million barrels a day in 2022 to 5.4 million barrels in 2029, which would make Brazil the world’s fourth largest producer.⁶ Responding to criticism from environmentalists, the government argues that it needs the revenues for its social programmes – funnily enough, a developing country has decided that raising living standards is a higher priority than reaching the arbitrary target of net zero.

At COP28 Brazil joined Canada in holding out for a deal that clearly demanded the ‘phasing out’ of fossil fuels rather than a ‘phasing down’ or the promise to ‘transition away’ that made the eventual communiqué. Yet, as with Brazil, what Canada practices is very different to its carefully-crafted image as a promoter of climate policies. In the two years to 2023, oil production expanded by 375,000 barrels per day.⁷

In 2022, global coal production reached a new record of 8.3 billion tonnes. Growth continued into the first half of 2023, too.⁸ While US climate envoy John Kerry said he was getting ‘more and more angry’ about the global expansion in coal,⁹ his own country was partly responsible for the rise, with US production increasing 2 percent in 2022. In India in September 2023, 73 percent of all electricity was generated by coal, with the amount of coal-fired power up 17 percent compared with the previous September.¹⁰ The Indian government is planning to expand coal output by 60 percent by 2030.

The building of new coal plants has slowed to a trickle across most of the world, but in that other great coal-guzzling economy, China, a pledge by Xi Jinping in 2021 to curtail and increasingly restrict its use to back-up generation for renewable energy does not appear to have been fulfilled. In the two years leading up to the pledge, Beijing approved plans for 127 new coal plants, with a total generating capacity of 54 GW. In the two years following, that increased, to approval for 182 plants with a total capacity of 131 GW.¹¹ So much for the prediction by the International Energy Agency that fossil fuel use in China will peak by the middle of the 2020s.

Only when it comes to gas did global demand fall in 2022 – by 1.5 percent. But that had rather a lot to do with the invasion of Ukraine, which led to supplies of Russian gas to western Europe firstly being reduced and then cut off altogether. It didn't mean that Europe turned away from fossil fuels, however. Germany abandoning its planned closures of coal-fired power plants – on the way to phasing them out altogether by 2030 – and instead reopened mothballed lignite mines. In the third quarter of 2022 German coal plants generated 36.3 percent of the country's electricity, up from 31.9 percent a year earlier.¹² In the meantime, Germany hurriedly constructed new terminals to receive Liquefied Natural Gas (LNG) imports from the US and Qatar. LNG has become one of the world's great boom industries, with new facilities capable of handling a total of 250 billion cubic metres of gas per year due to come onstream by 2030.¹³ That is not the sign of an industry preparing to contract.

The UK government has somewhat changed its tune on oil and gas. While previous incumbents of Number 10 had been happy to run down the North Sea, in 2023 Prime Minister Rishi Sunak announced that he would grant 100 licences for new gas and oil extraction, including the Rosebank field west of the Shetlands. While the announcement appalled the pressure group Just Stop Oil, the Labour party declared that it will not cancel the new licences if it finds itself in power. In a symbolic move, the government created a new ministry, the Department for Energy Security and Net Zero – in that order – asserting that from now on energy security will take precedence over the holy grail of net zero. Far from phasing out fossil fuels, Sunak predicted that a quarter of Britain's energy will still come from them in 2050, even after we are supposed to have reached the end goal. The government is now looking to carbon capture and storage in order to negate emissions from fossil fuel-burning, and has announced £20 billion worth of funding for demonstration plants and development of the technology. Taxpayers are going to be paying to invest in carbon capture, but it is not clear who is going to pay the ongoing costs of capturing all the carbon and finding somewhere to store it.

Wind looking less breezy, solar less sunny

Renewable energy, its proponents like to argue, is in the ascendant. In 2022 an additional 330 GW of capacity was added globally. (That is not amount of power which will, in practice, be generated by renewable energy because of course wind and solar are highly intermittent.) However, all is not well in the industry. A boom in new solar installations – which accounted for two-thirds of the total extra capacity in renewable energy – is helping to disguise a big slowdown in wind. The new capacity added globally fell 21 percent between 2021 and 2022. The reason is that costs of the steel, cement and other raw materials which go into building wind

farms, which had been falling for a decade, suddenly started to rise sharply. Rising interest rates another have also increased the cost of building wind farms. With wind and solar energy, the vast majority of lifetime costs come upfront, in construction costs. When interest rates were at near-zero, projects were easy to finance. Now, many have become unprofitable.

'The Saudi Arabia of wind' was how then Prime Minister Boris Johnson described his ambitions for Britain's renewable energy industry in 2020, claiming that wind energy could 'power every home' by 2030. He duly increased the government's target for offshore wind capacity to 40 GW by 2030. By way of contrast, UK power demand in 2021 averaged 37 GW. The contribution of wind energy has increased sharply in recent years, and in 2022 provided 25 percent of total electricity consumed. But what are the chances of wind 'powering every home'? Not great, to judge by recent events. In July 2023 wind energy company Vattenfall ceased construction work on the 1.4-GW Norfolk Boreas wind farm, after costs had risen by 40 percent, making the project unprofitable at the long-term guaranteed electricity prices it had agreed under the Contracts for Difference scheme a year earlier.¹⁴

Then there was the government's auction of offshore wind licenses in September 2023. Lucky bidders were to have been rewarded with a guaranteed, inflation-linked 'strike price', capped at around £60 per megawatt-hour at today's prices. Except there were no bidders – not a single one. The wind industry, which until shortly beforehand had been boasting of being the cheapest form of power, was now complaining that rising costs of steel and finance had made its projects unprofitable at that price, and it now needed an increase in strike prices of *70 percent*. The UK government surrendered, and two months later announced that it would raise the cap on bids by nearly two thirds. No longer can anyone claim that wind power is continuing on a path of ever-falling costs. The claim that wind energy is 'nine times cheaper' than gas, as made by website Carbon Brief in August 2022, never was true – the analysis behind it was economically inappropriate and mathematically flawed to boot.¹⁵ For one thing it compared the long-term, guaranteed prices paid to operators of wind and solar farms with the 'day ahead' prices, which have to be paid to owners of gas plants to switch them on for a few hours to make up for a lack of wind and solar power. But now the 'wind nine times cheaper' claim is looking even more of a fantasy.

It isn't just in Britain. In the US, the value of clean energy shares collapsed by \$30 billion in the six months to November 2023, as investors began to get nervous about the profitability of wind and solar – in spite of the billions of dollars support for the industry from Joe Biden's Inflation Reduction Act.¹⁶ The false narrative of dirt-cheap wind turns out to have been built on the back of an unprofitable supply chain. In 2022, General Electric's renewables

wing, which manufactures turbine blades, made a \$2.2 billion loss. European manufacturers Siemens, Vestas and Nordex also managed to lose €3 billion between them.¹⁷

Commercial-scale solar may still be booming, but it is a different story in the domestic solar industry in the US. In 2021, 700,000 householders installed panels on their rooftops, generating a combined 6 GW of power. Since then, the shares of the top two companies offering the service, Sunnova and Sunrun, have seen their share prices collapse by 80 percent and 90 percent respectively, as the industry's dependence on handouts and cheap credits has become clear.¹⁸ California has seen a particularly large collapse in domestic solar installations, falling by up to 85 percent in some months of 2023 after subsidies were cut. Previously, homeowners with solar panels were allowed to sell surplus electricity to the grid at the same price at which they could buy it, but the state changed this in April 2023 as it meant that utility providers were forced to buy expensive solar energy in the middle of the day when demand for power was low.

Commercial solar is inevitably going to run into some of the same problems faced by the wind industry. Indeed, solar energy is arguably even more intermittent than wind, with generation dropping during the winter and falling away to zero every evening. There is only so much intermittent renewable energy that can be fed into the grid without the need for dedicated backup or energy storage. This is a problem that is becoming increasingly apparent in Britain, where the National Grid Energy System Operator, which is responsible for balancing supply and demand, is having to constrain demand on some days and constrain supply on others. In January 2023, consumers were paid to turn off appliances on cold, still nights. Meanwhile, in 2022, windfarm operators were paid £215 million to switch off their turbines because the grid was unable to handle the power being generated. National Grid has warned that the sum could multiply to £2.5 billion a year by 2025.¹⁹ France, too, seems to be retreating on wind and solar energy. In January 2024 the government's new energy plan proposed to build between six and 14 new large nuclear reactors – but failed to repeat previous targets for increasing wind and solar capacity.²⁰

Hydrogen economy losing its puff

Remember the great hydrogen economy? Hydrogen has been presented as a potential solution for the intermittent nature of wind and solar energy. If we could use surplus energy on windy, sunny days to manufacture 'green' hydrogen via the electrolysis of water, and then burn it to produce power when wind and solar are in short supply – and to do it affordably – it could go a long way to answering the fundamental drawback of wind and solar. Hydrogen is also promoted as an instrumental part of decarbonising the steel industry – the idea being to replace the coking coal currently used





as a reducing agent to extract the oxygen from iron ore. Hydrogen has been touted as a 'drop in' solution for replacing oil and gas boilers in domestic properties too – far cheaper to install than electric heat pumps. The gas is widely seen, too, as the carbon-free solution for heavy road vehicles, given that the weight of the batteries required to power lorries and buses makes electric versions a lot less practical than electric cars.

The good news is that global hydrogen production is on the rise, with 94 million tonnes produced in 2021, up from 91 million tonnes in the pre-pandemic year of 2019. The bad news is that almost all of this continues to be manufactured in the traditional way from fossil fuels, which negates any prospect of reducing carbon emissions by using hydrogen as a fuel. Less than 1 million tonnes were 'low emission' hydrogen, either 'green' hydrogen manufactured via electrolysis of water or 'blue' hydrogen made from natural gas but with carbon capture and storage included.²¹

According to the International Energy Agency, there are enough hydrogen projects in the pipeline to produce between 16 and 24 million tonnes a year by 2030. Yet the quest to manufacture green hydrogen at an attractive price is not going to plan. In 2020 German energy company Raffinerie Heide teamed up with Orsted and EDF to build a hydrogen electrolyser, Westkuste 100, on the Schleswig-Holstein coast. It was supposed to produce 30 MW initially, expanding to 700 MW by 2030. But it never produced a single molecule. In November 2023 the project was abandoned on the grounds of cost – in spite of receiving €30 million in funding from the German Federal Government.²² Globally, the introduction of new electrolyser capacity fell back by 45 percent in 2022 compared with 2021.²³ Nor are hydrogen powered vehicles being produced at anything like the rate many had hoped: in 2022 there were still only 72,000 on the roads globally – 40 percent up on the previous year but still only a drop in the ocean. How to refill a hydrogen-powered vehicle on Britain's road system is something of a puzzle. Between 2017 and 2019 Shell opened hydrogen pumps at three motorway service stations in the south of England, with great publicity. They were supposed to form the nucleus of a whole new network of hydrogen pumps. Yet in 2022 Shell removed all of them, leaving just 11 hydrogen pumps to cover the entire country.

The prospect of hydrogen boilers in UK homes is waning, too. A proposed trial in Redcar has now been cancelled, as a result of a lack of support from local residents. Under the scheme, 2000 homes were to be switched from gas to hydrogen heating (or be fitted with electric heat pumps if their residents preferred). But that now looks unlikely as, in the words of Redcar Council leader Alec Brown, opposition to the scheme has grown.²⁴ How interesting that it was the residents of Redcar who had been chosen as guinea pigs rather than those in Brighton, Norwich or Bristol, where the Green vote is highest.

Small nuclear reactors failing to glow

Small modular reactors (SMRs) have been hailed as an integral part of our future energy mix. The UK government has plans to increase the proportion of electricity generated by nuclear energy from 15 percent in 2022 to 25 percent, with SMRs an important part of that. Reducing the size of reactors, it has been argued, will lower the cost of nuclear energy by allowing their components to be manufactured on production lines rather than built in situ to bespoke designs – an inverse economy of scale. But it is slow going on pioneering SMR projects in the American Mid West. In November 2023 a company called NuScale Power announced that it was to abandon a project to build six SMRs in Utah after towns that were sponsoring the plants pulled out on the grounds of a 53 percent increase in estimated costs – this in spite of the US Federal Government throwing in £4 billion of support.²⁵ SMRs, it turns out, have the same problems of cost-escalation as do large nuclear power stations such as Hinckley C in Somerset.

Electric cars running out of juice

Notionally, electric cars are booming. Globally, they made up 14 percent of the market in 2022, up from 9 percent in 2021 and 5 percent in 2020. Over 60 percent of sales were in China. The experience of more mature markets, however, is that sales tend to stall once an initial rush of enthusiasm from early adopters has run its course, and large, enticing grant schemes have come to an end. In November 2023, UK sales of pure electric cars stood at 24,359, a plunge of 17.1 percent on the same month in 2022. Overall car sales were up 9.5 percent over the same period. Was it a blip? Sales in the first 11 months of 2023 show that electric cars had a 16.3 percent share of the market, up a little from the 15.1 percent in the first 11 months of 2022²⁶. Yet closer examination of the figures, from the Society of Motor Manufacturers and Traders, shows that the modest increase in market share was entirely down to fleet buyers, who were attracted by tax advantages. In the first half of 2023 private buyers bought 37,000 electric cars, down from 41,800 a year earlier. It is a similar story in Germany, where the government's target to put 15 million electric cars on the roads by 2030 is beginning to look a pipe dream. In November 2023 sales were down 22 percent on the same month in 2022.²⁷

Part of the problem is cost. By 2024, confidently declared Bloomberg in 2021, the purchase price of a new electric car would be on a parity with a petrol car²⁸ – a prediction that will have encouraged the UK government in its decision to ban new petrol and diesel cars from 2030. Some hope. Even now, a new electric car will set you back nearly half as much again as a petrol equivalent. The slow uptake of electric cars inspired Prime Minister Rishi Sunak in September 2023 to delay the ban on sales of new petrol

and diesel vehicles to 2035. What he didn't do was to water down the zero emission vehicle (ZEV) mandate, which will require car manufacturers to ensure that at least 22 percent of the vehicles they sell in Britain from 1 January 2024 are pure electric models – a target which will climb steadily to reach 80 percent by 2030. If they fail they will be fined up to £15,000 for every car over the limit. But in a sign of growing dissent from MPs (who nodded through the Net Zero target without even a vote in 2019) 26 Conservative backbenchers rebelled when the ZEV was put to the Commons.

Prices of used electric cars, on the other hand, have crashed, falling by 30 percent in the year to April 2023 according to car valuation company Cap Hpi²⁹ – bucking the trend in the used car market as a whole. That is the effect of private buyers refusing to go electric, thanks in part to a lack of range, poor charging infrastructure, and problems insuring the vehicles – some insurers in 2023 announced they had suspended offering any cover for electric cars while they reassessed the costs of repairing them.

It isn't just in Britain that the electrification of the car industry is beginning to stumble. The EU, which had previously announced it would ban all new petrol and diesel cars by 2035, has changed its mind and declared that internal combustion engine cars will still be sold after that date so long as they are capable of running on e-fuels.³⁰ Given that you can make e-fuels – also known as synthetic fuels – to any recipe you like (albeit at a high price) it effectively means an indefinite stay of execution for petrol and diesel cars.

There is pressure, too, for Joe Biden to water down his electric car mandate, which is supposed to compel car manufacturers to ensure that at least two thirds of the vehicles they are selling by 2032 are pure electric vehicles. It is easy to set a target, rather harder to force motorists to buy a product they don't want. In November 2023, 3900 car dealers wrote to Biden demanding that the mandate be relaxed after finding that unsold electric cars were piling up on their forecourts. It was taking twice as long to sell electric vehicles, they complained, as it was petrol and diesel cars, in spite of efforts to tempt buyers with special offers. In January 2024, car rental firm Hertz announced that it was retreating from electric cars by selling 20,000 of them – a third of its electric fleet – and replacing them with petrol models.³¹ The reasons are the same as in the UK: motorists still find the vehicles too expensive, while apartment-dwellers have nowhere to charge them. The public charging network, as in the UK, is sparse, expensive and unreliable.³²

One thing is for sure: even if the market for electric cars in Britain does revive, it won't bring many of the promised 'green jobs' to Britain. Part of the government's strategy for the UK car industry revolved around a factory in Northumberland run by a consortium called Britishvolt. But in late 2022 the project collapsed without a spade being put into the ground, let alone ever producing a car battery.

Heat pumps cooling down

Heat pumps have become a central plank of the government's policy for decarbonising homes. By 2030 it wants 600,000 new installations of the devices every year. But demand is lagging well behind, as homeowners balk at the cost and are put off by the experience of people who have taken the plunge but have complained that their bills are higher than expected yet their homes are only lukewarm. To speed things up, in May 2022 the government introduced the Boiler Upgrade Scheme, which offered grants of £5000 to anyone replacing an oil or gas boiler with air source heat pump. The scheme had a £450 million pot of money which, at £5000 per grant, is enough to subsidise 90,000 installations. But at nearly the midway stage in October 2023, only 27,443 applications had been received and only 16,096 installations completed.³³ To try to speed things up, the government in September 2023 upped the maximum grant to £7500, and belatedly increased the size of the pot too, adding an extra £1.5 billion. Meanwhile, Rishi Sunak abandoned a previously-declared target to prohibit the installation of new oil-fired boilers in homes from 2026 – he now says that by 2035 80 percent of oil boiler replacements will have to be low-carbon. The government had also been planning to ban installations of new gas boilers from 2035; this has also been watered down to an 80 percent reduction in installations by that date.

Britain is often described as a laggard in heat pump installations, with only 55,168 sold in 2022 compared with 621,776 in France, 513,535 in Italy and 275,697 for Germany.³⁴ Yet closer inspection of the statistics, from the trade association the European Heat Pump Association, reveals that these figures include sales of reversible air-to-air heat pumps – ie classic air conditioning units – so long as they are installed with the intention of heating a property as well as cooling it. Heat pumps are mostly installed in places with cheap electricity, either hydro- or nuclear-based, and where homes have a back-up source of heating such as wood-burners. Britain comes low down in these statistics because few homeowners have installed air conditioning, and because our wind-powered grid delivers expensive electricity.

In another backtracking from targets, UK landlords were told in September 2023 that they would no longer be required to get their homes up to a 'C' rating on an Energy Performance Certificate (EPC) by 2025, with transgressors fined up to £30,000, as had previously been proposed. There is now no date set in law for rental properties to reach this standard. Fears of a shortage of rental properties as landlords withdrew them from the market was blamed for the change of heart.

A similar retreat has been staged by President Macron in France, where a proposed ban on new gas boilers from 2026 was recently ditched. Macron has also demanded that the EU begin

a moratorium on green regulations generally.³⁵ Canada, too, has backtracked on efforts to try to force homeowners to switch to electric heat pumps. A carbon tax, proposed by the Liberal government in 2019 and introduced in 2023, targets use of fossil fuels at a rate of CAN\$65 per tonne of carbon dioxide. But the impracticalities of switching some properties to heat pumps, the government excluded heating oil at the last moment.

Electric planes – left on the runway

‘Breaking records to combat climate change,’ beamed a press release from Rolls-Royce in November 2021, as the company’s experimental plane *Spirit of Innovation*, reached a speed of 345.7 mph, setting a new record for an electric plane. ‘We’re at the start of a new and exciting era in the future of electric aviation,’ it said.³⁶ It was all part of a strategy to make all the company’s new products compatible with net zero operation by 2030. But by November 2023 the experiment was over: Rolls-Royce announced that it was to sell its electric plane division, in a bid to cut costs and return to greater profitability.³⁷ The company was going to return to making jet engines for narrowbody jets instead – and bet on the possibility of them being able to run on sustainable aviation fuel (SAF) in future. The change of strategy came on the back of a successful transatlantic flight made in November 2023 by a Virgin jet powered by SAF manufactured from used vegetable oil.

Whether the airline industry can source enough used cooking oil to power more than a small proportion of planes remains something of a mystery – there are only so many chip shops in the world. SAF can be made from alternative feedstocks, but at a huge cost in land use. A study by the Energy Transitions Commission calculates that to produce enough biomass to provide 50 exajoules (EJ) worth of sustainable fuel a year would consume 20 percent of the world’s current cropped land.³⁸ A number of independent estimates suggest that the airline industry alone would gobble between a quarter and a third of that – somewhat conflicting with the plan to rewild large tracts of farmland.³⁹ SAF may be the latest darling of the net zero lobby, attracting investment from the US and UK governments in recent months, but when the land-use requirement becomes clear it may well be the next pipe dream to be dropped.

Investment drying up

We are always being told that net zero presents, not a cost, but an opportunity – in that it will save us money and create thousands of ‘green jobs’. Investors, for a while, were won over. But they are beginning to get cold feet, and are losing interest in underperforming investments. In 2020, according to the Global Sustainable Investment Alliance, investors worldwide had sunk a collective

\$35.3 trillion into sustainable assets. Two years later that had collapsed to \$30.3 trillion, partly as a result of money being withdrawn and partly as a result of investments themselves shrinking in value. In the US, in spite of Joe Biden's Inflation Reduction Act, the fall was even more precipitous, from \$17 trillion to \$8.4 trillion over the same period.

The fashion for green investments – a part of the wider Environmental, Social and Corporate Governance (ESG) movement – always was partly an illusion, with many fund managers attaching the word 'sustainable' to their funds in an effort to woo environmentally-conscious investors when there was nothing especially green about their portfolios. In November 2023 the Financial Conduct Authority was moved to announce that it was going to ban the use of the word in funds unless their managers could show that at least 70 percent of the investments are in companies or other assets that really do deserve the label (something which is never going to be anything other than subjective).

Another dubious market is that for carbon credits – voluntary levies that in theory allow companies and individuals to 'offset' their emissions by funding projects, many in the developing world, that supposedly lead a reduction in carbon emissions. But the whole concept is in deep trouble. An investigation by several newspapers claims that nearly 95 percent of projects which have supposedly prevented deforestation had achieved nothing of value – in spite of having been verified by a US-based company called Verra (Verra has challenged the findings).⁴⁰ Some businesses that previously used offsetting, such as Easyjet, have since abandoned it.

In 2019, in keeping with the corporate fashion of the time, Thames Water set itself a target to reach net zero by 2030. In 2023 it abandoned the target, after realising that it was compromising its ability to deliver on other environmental goals. While customers, it said, are 'supportive of our plans to reduce our carbon emissions, customers have told us that tackling sewer flooding and reducing sewage discharges should be a priority in our next business plan.'⁴¹

Nor is the future of state investment in net zero projects looking too assured. Initially, Keir Starmer's 'Green Prosperity Plan', announced in 2021, committed the Labour party to go into the next general election promising to spend £28 billion on green schemes in each and every year of the next parliament. The money was to be spent on offshore wind, in an attempt to decarbonise all electricity by 2030, and on projects such as developing manufacturing capability for electric car batteries (similar to the Conservative government's failed project in Northumberland). Then, in June 2023, shadow chancellor Rachel Reeves changed her mind. Investment would be steadily increased during the next Parliament, reaching £28 billion only in the last year, she said. In December 2023 Starmer further diluted the policy, admitting that the £28 billion investment might not be reached in the next

Parliament at all. Borrowing vast sums to throw at green projects, it seems, is no longer a guaranteed route to prosperity.

What now?

Trying to achieve net zero greenhouse gas emissions always was going to require a multitude of new technologies, many of which have yet to be invented or scaled up to commercial operation. Already, many of the potential solutions are beginning to fall by the wayside before they have become established: such as hydrogen heating, small nuclear reactors and electric planes. Reliance is being placed on an ever-smaller pool of technologies, and many of these, too, are creaking under the weight of expectation, such as wind and solar energy. Meanwhile, the cost implications of a net zero strategy on ordinary households are becoming clearer. Governments are beginning to pull back on targets which threatened to become an unreasonable burden. It is becoming increasingly clear that for governments to set targets of reaching net zero by 2050, or any other year on the current horizon, are rash. If clean technologies are to be the future they need the time and space to prove themselves – rather than be forced on society half-baked.

Notes

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