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It's Broke, Fix It.

Where British Energy Policy Went Wrong and How to Get it Right

Rupert Darwall
Foreword by Claire Coutinho MP

Contents

Glossary

BEIS: Department for Business, Energy & Industrial Strategy

BNFL: British Nuclear Fuels Limited

CCGT: Combined cycle gas turbine

CEGB: Central Electricity Generating Board

CfD: Contract for Difference

CPS: Carbon Price Support

DECC: Department of Energy & Climate Change

DESNZ: Department for Energy Security and Net Zero

EMR: Energy Market Reform

ENEL: Ente Nazionale per l'Energia Elettrica

ETS: Emissions Trading Scheme

GDP: Gross domestic product

GW: Gigawatt

HMT: His Majesty's Treasury

MW: Megawatt

MWh: Megawatt hour

OBR: Office for Budget Responsibility

PV: Photovoltaic

REC: Regional electricity company

ROC: Renewable Obligation Certificate

TW: Terawatt

TWh: Terawatt hour

About the author

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Foreword

The world is getting more dangerous. In Britain, our post-pandemic public finances are stretched, welfare is ballooning, and our tax base is narrowing. The public can see through the Government's pretence of continuing business as usual. They know that things must change before it is too late.

Few areas exemplify this more than energy policy, where we are decades into a folly of our own making. Since the mid-2000s, the British people have been promised something that seemed too good to be true: a swiftly delivered green energy sector built on solar and wind power that would create hundreds of thousands of jobs and reduce our carbon emissions and energy bills at the same time. All this was in aid of reaching Net Zero.

The trouble is, it *was* too good to be true—certainly in the way that it was attempted by parties of all stripes, including my own. I served as Energy Secretary in the final year of the last Conservative Government. I started my tenure with a reset of Net Zero, arguing that we must be honest about the costs and trade-offs and acting to push back bans and mandates that would have imposed huge costs on an unwilling public.

That reset was controversial at the time, but it did not go far enough. Whilst historically low interest rates papered over the cracks, the economics of prioritising intermittent, subsidised renewable energy over reliable power from domestically-extracted natural gas were fundamentally flawed.

The British public know this, because their energy bills prove it. We no longer have a market that prioritises the consumer. Both the cost and reliability of our energy system have been subordinated to the legislative requirement to meet climate targets. What's more, we have crippled the productivity of our electricity supply, replacing on-demand dispatchable generation with unpredictable renewables.

In the ten months I had in office, I spoke about the need for more gas power and launched the largest expansion of nuclear power in seventy years because we need to be able to keep the lights on when the wind does not blow and the sun does not shine. However, since taking office Ed Miliband has doubled down on a renewables-based system which involves building more and more capacity, much of which will sit idle for huge swathes of time. This means a higher cost, less productive energy system which delivers less value for billpayers.

In this timely new report, *It's Broke, Fix It: Where British Energy Policy Went Wrong and How to Get It Right*, Rupert Darwall puts forward his insightful explanation of how we got here.

The energy sector underpins our entire economy since everyone, whether a domestic user or heavy industry, has an energy bill to pay. Those in the energy sector must be free to innovate, deliver high returns, and provide cheap, abundant, reliable energy. Instead, it has created ample room for vested interests and rent-seeking, while the state has been exerting ever more pow-

er in pursuit of climate targets which have done little to reduce global emissions but inflicted significant damage to British prosperity. Even our chief regulator, Ofgem, has gone from being a consumer watchdog to an enforcer for the Department of Energy Security and Net Zero.

The Net Zero consensus has finally begun to crack. This, and the fact that the British Government needed to take a new approach, became evident to me as Energy Secretary between 2023 and 2024. I implemented reforms to mitigate some of the damage, but regrettably it was not possible to reverse course in time. I may not agree with every point Rupert makes, but as we look to a future unburdened by Net Zero and the Climate Change Act, the ideas in this report will be immensely useful to debate so we can chart the journey back to an energy system that puts consumers at its core.

Energy is prosperity. No country has ever become prosperous without an abundance of cheap, reliable energy. British households and businesses are already paying the price for years of foolish policy. Soon, any government which refuses to carry out major reform of our energy market will be paying it too.

The Rt Hon Claire Coutinho MP
Shadow Secretary of State for Energy Security and Net Zero

Executive summary

Britain's energy policy, pursued by governments of all parties since 2007, is on the brink of collapse. Years of denial that wind and solar energy do not increase costs are over—except in Westminster and Whitehall, which continue to ignore the damaging macro-economic impact of Net Zero and the mass deployment of wind and solar energy. In the recent 2025 Autumn Budget, the Chancellor opted to raise taxes because productivity growth assumptions have been downgraded. Rachel Reeves blames Brexit, the Conservatives, the 2007-8 financial crisis—anything except Net Zero. But higher energy costs caused by renewables destroy GDP and, as this paper shows, are unambiguously bad for productivity.

Whereas the Labour Government remains committed to Net Zero, the Conservatives and Reform UK now reject it. That means both parties are in the market for a new energy policy—a welcome step. **But in order to get out of here, an incoming government first needs to know how we got here.**

Two phases of energy policy

Since 1990, there have been two phases of British energy policy. Phase One saw privatisation and liberalisation and lasted through two-and-a-half terms of New Labour.

Phase Two started in 2007, when Tony Blair committed Britain to the EU's 20% renewables target. The role of the market in allocating capital between different generating technologies was formally supplanted by the state in Ed Davey's Electricity Market Reform (EMR) during the coalition government. EMR's chief innovation was the use of Contracts for Difference (CfDs) to subsidise renewable energy and insulate investors from price risk, which was passed to consumers. For this reason, EMR initiated a boom in wind and solar capacity paid for by spiralling energy bills.

(See the Appendix for a detailed policy timeline of Phases One and Two to enable identification of the heroes and villains of energy policy, sadly there being more of the latter than the former.)

Impact on Britain's generating capacity

EMR and the policy decision to push coal off the grid led to a rapid deterioration in Britain's generation capacity: 24 GW of reliable coal fired power capacity was prematurely retired and replaced by 45 GW of intermittent wind and solar capacity. By 2024, Britain had almost as much renewable capacity as dispatchable (principally natural gas and nuclear) capacity. The fall in dispatchable capacity led to an increased reliance on imported electricity, which rose from 2% in 2009 to 16% in 2024, worsening Britain's energy security.

Impact on economic growth and productivity

The influx of 45 GW of renewable capacity resulted in a huge deterioration in the productivity

of the grid. Between 2009 and 2024, total generating capacity rose by 20.7% but the enlarged capacity, with nearly 50% renewables, produced 24.2% less electricity. Producing less with more is the fundamental economic fact about renewables, which explains why having more renewables pushes up costs and makes everyone other than renewables investors worse off.

Key lessons for policymakers

Over the last four and a half decades, when they were each given the chance to take the lead, the markets worked and the British state failed. Why? Because energy policy was used as a tool of industrial policy in the vain hope of creating a world leading offshore wind industry; Whitehall committed the error of adopting multiple conflicting policy objectives (e.g. decarbonizing the grid and keeping energy bills down); and policy was captured by vested interests.

The foundational error of Phase Two was subordinating energy policy to climate policy. If you have a climate policy, it should be economy-wide, not sector-specific, as this leads to continuous state interventions and becomes a licence for rampant rent-seeking. **The essential first step to energy policy rationality is to separate energy policy and climate policy.** Policymakers should then define what they want their policy to achieve and the policy instruments to achieve it.

Policymakers also need to face up to the risks posed by Britain not having enough dispatchable capacity, thanks to the political decision to push coal off the grid. If they want energy prices to fall, supply needs to increase, which means having more non-intermittent generating capacity. This is likely to require a rapid build-out of gas-fired capacity, or even coal.

Recommendations

Whichever party or parties form the next government, they have only one chance to get energy policy right by applying the lessons of the past and decisively breaking with two decades of policy failure. The fundamental step is to divorce energy policy from climate policy. Parliament has, since 2007, enacted legislation to lock-in Net Zero energy policies, such as the Climate Change Act 2008. Such legislation needs to be repealed or amended.

Additionally, this paper recommends:

- Shutting down the current Department of Energy Security and Net Zero (which has overseen the worst policy disaster since 1945 and has been captured by vested interests), and replacing it with a new department focused exclusively on policy.
- A wholesale clear-out of Ofgem's senior leadership.
- Establishing a New Generation Task Force to replace around 20 GW of missing non-intermittent capacity, consideration being given to use of the Government's balance sheet on value-for-money grounds via Ed Miliband's Great British Energy.

1. Purpose and approach

Main points

- The bubble of delusion that renewable energy is cheap and that Net Zero is the economic opportunity of the century has been burst.
- However, these discredited beliefs still dominate Whitehall, the Climate Change Committee, and Ofgem, in large part because **policy has been captured by vested interests.**
- **The next government should therefore expect obstruction from the establishment.** Opposition parties should be currently developing energy policy that is comprehensive and preparing to implement it in the teeth of entrenched Whitehall opposition.

It is now widely recognised that Britain's energy policy is driving up energy costs. When even *The Economist*, a progressive publication committed to promoting environmentalist orthodoxy, reports that the price of electricity charged to British households is 20% higher than other major European economies and for British business 90% higher, the game is up.[1] Adding more heavily subsidised wind and solar pushes up energy costs even higher, makes the grid more fragile and increases the risk of what grid managers call 'load shedding'—that is, blackouts. **As the American economist Herb Stein quipped, "If something cannot go on forever, it will stop."**[2] **That is what is now happening.**

Yet a bubble of denial and delusion persists. Nine days after *The Economist* slammed offshore wind as a "geographical and regulatory folly," Chris Stark, Head of the UK's Mission for Clean Power in the Department for Energy and Net Zero (DESNZ), wrote in *The Telegraph* that offshore wind is "Britain's greatest asset."[3] Elsewhere, in its July 2025 *Fiscal Risks and Sustainability* report, the Office for Budget Responsibility (OBR), citing the Climate Change Committee, cut the projected cost of Net Zero by 65%, from £320bn to £116bn, in part due to the supposedly falling costs of renewable technologies.[4] Yet only days after Stark and the OBR's assertions, Ørsted, the world's largest offshore wind operator, announced a colossal $9.4bn rescue rights issue supported by the Danish state.[5] In the real world, offshore wind is a bust.

Moreover, the OBR has no opinion on whether the impact of Net Zero on productivity is positive or negative[6], despite what the data show and economic logic says: that imposing a constraint

1 *The Economist*, "Is Britain's net-zero push to blame for its high energy prices?", 31 July 2025. (link)

2 Herb Stein, *A symposium on the 40th anniversary of the Joint Economic Committee : hearings before the Joint Economic Committee, Congress of the United States, Ninety-ninth Congress, first session, January 16 and 17, 1986* (Washington: U.S. Government Printing Office, 1986), 262. (link)

3 Jonathan Leake, "Britain must copy China in net zero race, says Milibands energy tsar", *The Telegraph*, 9 August 2025. (link)

4 Office for Budget Responsibility, *Financial Risks and Sustainability*, 8 July 2025, 105. (link)

5 Jacob Gronholt-Pedersen and Soren Jeppesen, "Orsted plunges as it seeks $9.4 billion to cope with Trump's hostility to wind power", *Reuters*, 11 August 2025. (link)

6 OBR, *Financial Risks and Sustainability*, 115.

cannot make an economy grow faster than an economy free of such a constraint. In its 2012 *Net Zero Review*, the Treasury argued that Net Zero creates opportunities for innovation.[7] The fallacy in its reasoning is assuming that there is no opportunity cost to innovation. This matters. The OBR's downgrade of its assumptions on future productivity growth is driving the Chancellor and the Treasury to impose massive tax increases on the economy, when one of the culprits—likely the main one—for Britain's abysmal productivity performance is Net Zero and its associated energy policies.

These delusions pre-date the current Government. In 2018, during his disastrous tenure as the Conservative Secretary of State for Business, Energy and Industrial Strategy, Greg Clark announced that the energy trilemma—sustainability (that is, meeting decarbonisation targets), reliability, and affordability—had been solved. "Trilemma well and truly over. Shout it from the rooftops," Clark declared.[8] (The Appendix contains a full policy timeline that shows how Clark squandered the best chance to change course and avert the full horror of the energy policy disaster in which the country now finds itself).

Whitehall has also bought in to the delusions of renewable energy. It means any incoming government will encounter wilful ignorance and entrenched opposition to having a rational energy policy and averting a policy-driven energy crunch.

This places a great burden of responsibility on opposition parties. To be ready to govern, they must have conducted a proper review of energy policy outside government and come into government with fully-formed, detailed, and robust plans which they can then push through in the teeth of Whitehall obstructionism and special interest lobbying. The plan and the arguments supporting them must be coherent, thought-through, and battle-ready. Those seeking to implement them must possess the strength of mind and character not to be blown off course.

Rather than advocating a particular solution, the purpose of this paper is to provide guidance to political parties on how to get to the right answer and to enable their supporters and funders, as well as media commentators, to grade their ongoing effort.

To know how to get out of here:

- You need to know how we got here.
- You need to understand the precise reasons why the current direction of travel is unsustainable, in the Herb Stein sense. In particular, the dire state of Britain's generating mix, with dangerously inadequate levels of dispatchable generating capacity and heavy reliance on imported electricity, needs to be grasped.
- You need to be aware of the lessons of the past: what has worked, what does not, and the errors to avoid.
- You need to pre-define the objectives of the new policy and the principles for achieving them.
- You need to have identified the laws which require amendment or repeal because they lock policy into the current paradigm or which otherwise would obstruct attainment of your policy objectives.

7 HM Treasury, *Net Zero Review: Analysis exploring the key issues*, 19 October 2021, 12. (link)

8 Greg Clark, "After the trilemma – 4 principles for the power sector", Speech, Department for Business, Energy & Industrial Strategy, 15 November 2018. (link)

2. How we got here

Main points

- **Nigel Lawson's 1982 speech overturned the post-1945 consensus on the role of the state**, including the nationalised energy industries, to plan and deliver projected quantities of energy from specified sources decades into the future.
- Lawson's speech was the inspiration for privatisation and liberalisation (Phase One) that started in 1990 and continued by New Labour until 2007.
- Phase Two saw the state take back control, starting with Tony Blair agreeing to the EU's 20% renewable energy target, and deepening under the Coalition with Electricity Market Reform, which saw the state back in the business of energy planning and procurement.

The last four decades of energy policy divides into two phases. The first phase, which began in 1990, flowed from Nigel Lawson's seminal speech on energy policy in 1982.[9] **Lawson argued that markets, not the state, should estimate future energy demand and the optimal generating mix and capacity to meet it.** The consensus that Lawson overturned was that the state, in the guise of the Department of Energy, should make projections of energy demand through to some point in the twenty-first century; after which, there should be projections of the supply of each of the forms of energy over the period and policies devised to ensure, via the respective nationalised industries, that supply and demand equated.[10] Lawson's pro-market approach provided the philosophical basis for the privatisation of the electricity industry in the 1990s.

The first phase lasted through New Labour's first two terms, but ended in 2007, when Tony Blair committed Britain to the most demanding renewable energy target in the EU. This necessitated the state stepping back into the role of specifying generating technologies and deciding the price and quantum of such investment. **The outcome is an inherently inefficient hybrid of state control and private ownership.**

Phase one: Privatisation and liberalisation (1990–2007)

Conservatives 1990–1997

Privatisation made the British energy industry more efficient. Between 1991 and 1995, National Power and PowerGen cut staff numbers by two-thirds and one-half respectively.[11] The Regional Electricity Companies (RECs, twelve newly created companies that took over the regional distribution and supply functions of the old electricity area boards) cut their operating

9 Nigel Lawson, *The View from No.11: Memoirs of a Tory Radical* (London: Bantam Press, 1992), 164-66.

10 Nigel Lawson, *The View from No.11: Memoirs of a Tory Radical* (1992), 163.

11 Alex Henney, *The British Electric Industry 1990-2010: The Rise and Demise of Competition* (London: EEE Limited, 2011), 20.

costs faster than assumed by the regulator, managing a 25% reduction between 1994-95 and 1997-98.[12]

Deregulation also led to the 1990s' "Dash for Gas", which saw private investment in 5.5 GW of new Combined Cycle Gas Turbine (CCGT) capacity. A 1997 analysis published by the World Bank estimated a £6-11.9bn range of net benefits[13], while a 2004 analysis yielded a net benefit estimate of £23bn.[14]

Nevertheless, the privatisation of the electricity industry was distorted by the attempt to include Britain's nuclear power stations. Preparations for the flotations revealed what the Central Electricity Generating Board (CEGB) had kept hidden: the poor economics of Britain's nuclear power programme. This led to the decision to transfer the CEGB's generating assets to two new state-owned companies, National Power and PowerGen, which were then going to be privatised. Although the plan for National Power to carry the nuclear assets and liabilities was abandoned, the National Power/PowerGen duopoly remained in place, leading to higher wholesale electricity prices than would have prevailed in a competitive market.

New Labour 1997–2007

New Labour's election in 1997 saw the expansion of regulation to embrace wider social and environmental goals while aiming to retain the fundamentals of a market-based system. The new government was almost immediately faced with the prospect of coal mine closures. Peter Mandelson, the trade and industry secretary, imposed a short-term halt on consents for new CCGTs "while the distortions in the market are removed, so that the final result is a more competitive market."[15] As late as May 2007, Alistair Darling's *Meeting the Challenge* Energy White Paper was still extolling the market, stating that "a market-based approach within a clear policy framework" provides an effective way to manage uncertainty about the future.[16]

However, by then, the 17-year pro-market policy phase was over and a new phase of the state taking back control had begun.

Phase two: The return of the state (2007–present)

New Labour post-2007

At the March 2007 European Council, heads of government agreed to mandatory 20% renewable energy targets.[17] The push for renewables within the European Union (EU) originally came from Germany as part of their industrial policy, which aimed to create a German solar manufacturing sector (but instead succeeded in creating a vast solar photovoltaic (PV) sector in China), and because of ideology (the formation of the Greens in 1980 led to the greening of German politics).

Subsidising zero-marginal cost generating capacity ends up destroying the ability of the

12 Henney, *The British Electric Industry 1990-2010*, 230.

13 David M. Newbery and Michael G. Pollitt, "The Restructuring and Privatization of the U.K. Energy Supply—Was Is Worth It?", *Viewpoint*, Note No. 124, September 1997, The World Bank Group. (link)

14 Stephen Littlechild, "Competition and Regulation in the UK Electricity Market", *Économie publique/ Public economics*, 14 no. 1 (2004), published online 5 January, 2006, accessed 10 September, 2025. DOI: https://doi.org/10.4000/economiepublique.208. (link)

15 Department of Trade and Industry, *Energy White Paper – Conclusions of the Review of Energy Sources for Power Generation* (1998), para 2.43.

16 Alistair Darling, *Meeting the Energy Challenge: A White Paper on Energy*, May 2007, 16. (link)

17 European Commission, "Boosting growth and jobs by meeting our climate change commitments", 23 January 2008. (link)

wholesale market to produce price signals to guide private sector investment in new generating capacity. Moreover, replacing the market with the state as the allocator of investment capital hugely increases the financial returns to be made from lobbying and rent-seeking.

2010-2015 Conservative-Liberal Democrat coalition

The electricity sector's vulnerability to rent-seeking from renewable interest predation increased enormously with the coalition government's Electricity Market Reform (EMR) and its choice of the central-buyer option that had previously been dismissed in the dying days of the Brown government as too statist. Under the central-buyer approach of EMR, ministers and civil servants decide how much and what type of generating capacity should be procured, something which had been the core function of the market in Phase One.

The rationale for replacing the market with the state set out in Ed Davey's *Electricity Market Review: Policy Overview* White Paper in November 2012 was not that the market had failed (as the White Paper admits, it had not). It was that the government wished to mobilise private capital to fund their objectives for the energy sector: "Since electricity privatisation, the current electricity market has worked well, delivering reliable and affordable power... Yet the current market will not deliver the huge investment necessary to meet new challenges."[18]

In its dismissal of the central buyer option, the Brown government had argued: "[T]here is a high risk that the agency [which turned out to be the government itself] may not be as well placed as suppliers in a competitive market to correctly determine the need for generation investment."[19] Private sector executives being better placed than civil servants sitting in Whitehall is one reason why markets are more efficient than central planning.

Another reason is the structural allocation of risk. In a market-based system, investors are exposed to the risk of their investments turning sour. **EMR transfers risk from investors in politically-favoured renewables to customers chiefly through Contracts for Difference (CfDs), which give investors guaranteed prices for their electricity at the expense of consumers.** Thus, the price of the "success" of EMR in mobilising capital by transferring risk from investors to customers is the sky-high electricity prices that households and businesses are now forced to pay.

Why the return of the state went wrong

There are two fundamental flaws in Britain's post-2007 return to government central planning of the energy market:

- *Expertise*: Civil servants and politicians do not have the expertise to make capital allocation decisions compared with corporate executives, whether they are in the public or private sector.
- *Incentives and accountability*: Even more importantly, the transfer of risk from the providers of capital to customers means that capital providers and civil servants do not have the incentive and are not accountable for the success or failure of those capital allocation decisions, instead creating a cornucopia of opportunities for green rent-seekers.

| 18 Department of Energy & Climate Change, *Electricity Market Reform: Policy Overview*, November 2012, 9. (link)

| 19 HM Treasury, *Energy Market Assessment*, March 2010, 35-36 (currently unavailable online).

The purpose of privatisation was to transfer investment risk from the taxpayer to private shareholders. The CEGB, which had expertise as capital allocators, hid the costs of nuclear power and the losses that would accrue to taxpayers. Privatisation revealed those costs and injected incentives for investment efficiency in power generation. **Although the outward appearance of a privatised industry remained, from 2007, its competitive dynamic was fatally compromised**—first when Tony Blair agreed to the EU 20% renewables target and then killed off when the coalition government adopted EMR to mobilise capital to meet government decarbonisation goals.

Here we can see the original sin of current energy policy: subordinating energy policy so it becomes a tool of climate policy. In 2005, two years before the EU decided to impose renewables on the energy system, the EU launched its Emissions Trading Scheme (ETS). There was no rational case for having a separate renewables target for power generation and singling it out for special treatment. A tonne of CO_2 has an identical climate impact irrespective of which sector emitted it. Because the renewables target was adopted without reducing the cap on CO_2 emissions, the effect of the renewables target was to displace emissions, not reduce them. There was no economic or environmental justification for setting renewable energy targets. The whole project was political and ideological and has ended up lining the pockets of vested interests.

In the 2017 *Cost of Energy: Independent Review,* Dieter Helm wrote: "the cost of energy is significantly higher than it needs to be to meet the government's objectives".[20] One reason for this is that we have ended up with the inherently inefficient hybrid of state control combined with private ownership. This sees private investors building wind farms with inadequate transmission capacity having to be paid to curtail their output (£393m in 2024) and incurs a cost of capital penalty.[21] For all its faults, the CEGB would have done a far better job than the current uncoordinated mess overseen by out-of-their depth civil servants advised and pressured by hordes of consultants, and been better able to withstand capture by special interests.

20 Dieter Helm, *Cost of Energy: Independent Review*, 25 October 2017, xi. (link)

21 Renewable Energy Foundation, "Discarded wind energy increases by 91% in 2024", 2 January 2025. (link)

3. The sorry story of Britain's deteriorating generating capacity

Main points

- **From 2010, EMR and the premature retirement of coal-fired capacity led to a serious degradation in Britain's generating capacity.**
- Although ministers at the time envisaged coal being replaced by new gas-fired capacity, this never happened.
- Instead, coal was replaced by weather-dependent, intermittent wind and solar, accounting for nearly 50% of capacity in 2024, undermining grid reliability and stability as well as pushing up costs.

Electricity is unique in that its production and consumption take place virtually instantaneously. Dispatchable generation refers to capacity—typically coal, gas, and nuclear—whose output can be varied to precisely meet demand, something weather-dependent wind and solar cannot do.

Britain entered Phase Two ("the state takes back control") in good shape. In 2010, Britain's dispatchable generating capacity peaked at 90.4 GW, 17.1 GW higher than in 1996. But coal, as the most CO_2-intensive fuel (other than wood pellets) was targeted for closure. Both Ed Davey and Amber Rudd, his Conservative successor, envisaged that coal-fired capacity coming off the grid would be replaced by new gas-fired capacity. A combination of anti-coal regulations and George Osborne's introduction of the Carbon Price Support (CPS), a unilateral carbon tax on top of the ETS, accelerated the retirement of coal.

By the end of 2024, all 23.7 GW of coal had indeed come off the grid, but the new gas never materialised. In fact, gas-fired capacity fell slightly and 5.0 GW of nuclear were also retired. Overall, Britain's dispatchable generating capacity fell by 33.3 GW in 14 years—a decline of 38% (Table 1).

Table 1: *Dispatchable capacity 2010–2024 (GW)*

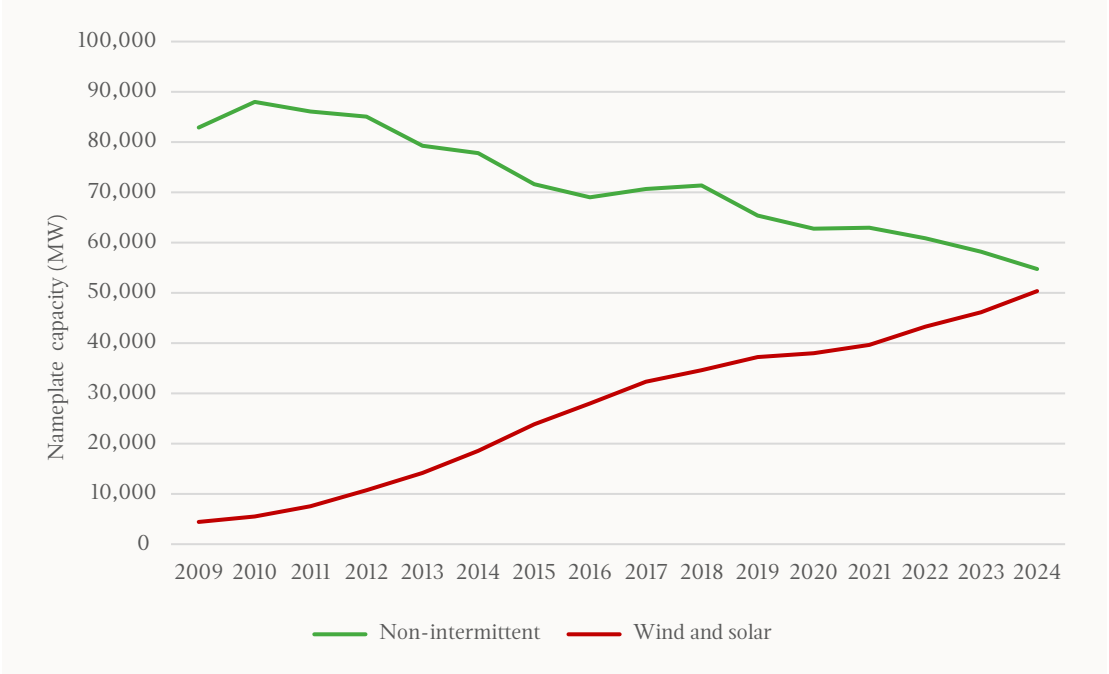
	2010	2024	Change
Coal fired	23.7	0.0	-23.7
Oil fired	5.2	1.3	-3.9
Gas fired	35.6	34.7	-0.8
Mixed or dual fuelled	6.1	0.0	-6.1
Nuclear stations	10.9	5.9	-5.0
Hydro (natural flow)	1.5	1.6	+0.1

Bioenergy and waste	1.9	8.3	+6.4
Other fossil fuels	0.5	0.2	-0.3
Pumped hydro	2.7	2.7	0.0
Total dispatchable	88.0	54.8	-33.3

Source: DUKES, Table 5.7

Instead of 23.7 GW being replaced by reliable gas-fired capacity, energy policy meant that the 33.3 GW loss of dispatchable capacity was replaced by 44.9 GW of unreliable renewable capacity, consisting of 12.0 GW of onshore wind, 14.7 GW of offshore wind, and 18.8 GW of solar (both re-rated to nameplate capacity—their maximum design output under ideal weather conditions).[22] **The surge in renewable capacity means that Britain is on the cusp of having more weather-dependent renewable capacity on its grid than dispatchable capacity (see Figure 1).**

Figure 1: *Dispatchable (non-intermittent) vs intermittent wind & solar nameplate capacity (MW) - 2009-2024*



Source: DUKES, Table 5.7

There are three damaging consequences to replacing dispatchable capacity with intermittent capacity:

- The higher the proportion of wind and solar capacity, the more fragile and unstable the grid becomes.
- The decline in dispatchable capacity implies an ever-tightening margin over peak load (i.e. demand), increasing Britain's reliance on imported electricity.
- The capital inefficiency of a renewable-heavy grid (defined here as output per MW of generating capacity, i.e. before taking account of extra grid infrastructure required by renewables) pushes the productivity of the grid down and costs up.

| 22 DUKES, Table 5.7. (link)

Renewables make the grid more fragile in two ways:

- Constantly-fluctuating, weather-dependent generation cannot match supply to demand.
- Electricity flowing through the grid must be kept within a tight range of 49.5–50.5 hertz (cycles per second) and aim to keep electrical frequency within 0.2 hertz. Whereas the spinning turbines of traditional power stations help stabilise the grid by supplying it with spinning inertia (analogous to the momentum of a spinning gyroscope that keeps it upright), the rising proportion of renewables makes it harder for network managers to balance the system and keep frequency within these limits.

The Iberian blackout in April 2025 is a warning of the consequences for the grid of excessive wind and solar generation.[23] In August 2019, Britain had its own warning with grid disruption that affected one million customers and caused major disruption to rail services.[24]

Every MW of new wind and solar coming onto the grid and every MW of dispatchable capacity coming off the grid makes the grid less stable and increases the likelihood of grid disruptions and blackouts.

23 Kathryn Porter, "Voltage, inertia and the Iberian blackout part 2: faulty PV inverter crashed the grid", *Watt-Logic*, 16 July 2025. (link)

24 John Constable, *The Brink of Darkness: Britain's Fragile Power Grid* (GWPF, 2020), 18-21. (link)

4. Energy security and Britain's dwindling capacity margin

Main points

- Renewable capacity is not a substitute for dispatchable (demand-responsive) generation such as coal, gas, and nuclear.
- **The only reason the lights stayed on between 2010 and 2024 is that demand fell by 17% in response to higher electricity prices.** At the same time, Britain became increasingly dependent on imported electricity, which rose from 2% of final consumption in 2009 to 16% of final consumption in 2024.
- This shows the folly of those claiming Britain could be a renewable energy super power. **We are importing electricity when supply is very tight and the price very high and exporting electricity when supply is plentiful and it has to be virtually given away.** Buying high and selling low is a time-honoured formula for financial ruin.

The inherent unreliability of weather-generated power throws the burden of maintaining sufficient margin onto dispatchable generators. As has already been seen, dispatchable generating capacity fell by 38% between 2010 and 2024. Over the same period, electricity consumption fell by 17%. **Three-quarters of that fall is accounted for by industry de-industrialising and households forced into using less electricity because they are being squeezed by rising electricity prices, while consumption by the Government and public administration sector remained essentially flat.**[25] Had electricity demand not fallen, the lights would have gone out.

As it was, Britain began to rely more heavily on imported electricity, which rose from 2.0% of consumption in 2009 to 16.1% of consumption in 2024 (see Figure 2). In absolute terms, imported electricity rose from 6.6 TWh in 2009 to 43.7 TWh in 2024—a near seven-fold increase.

Britain's reliance "on the kindness of strangers," to borrow from Mark Carney, the former Bank of England governor, puts into perspective self-aggrandising claims of Britain becoming a clean energy superpower.[26] **What this means is that Britain exports electricity when, thanks to the weather, it is so cheap it has to be virtually given away and is forced to import electricity when it is scarce and very expensive. This is a formula for national impoverishment.**

25 DUKES Table 5.1. (link)

26 Mark Carney, "A Fine Balance", Bank of England, 20 June 2017. (link)

Figure 2: *Imports as percentage of final consumption*

Source: DUKES, Table 5.1

Reliance on imports is risky, as can be seen across Europe. Russia's 2022 invasion of Ukraine squeezed natural gas prices to stratospheric levels, and coincided with corrosion issues at one of the French nuclear reactors leading to planned outages which reduced France's nuclear output by around 110 TWh.[27] That same year, British electricity imports nearly halved, from 28.8 TWh in 2021 to 15.5 TWh as we struggled to find adequate supply to meet demand.

Other electricity exporters such as Sweden and Norway are seeing their wholesale markets disrupted and massively distorted by huge swings in random quantities of renewable energy from other countries, particularly Germany, causing extreme price volatility. It is therefore unsurprising that both countries are considering insulating their markets from ones dominated by renewables.[28] **Imports are not a dependable, low-cost substitute if a country lacks sufficient dispatchable capacity to meet its own needs when there is not enough sun and wind.**

27 World Nuclear Association, "Nuclear Power in France", last updated 23 October 2025. (link)

28 Richard Milne, "Norway campaigns to cut energy links to Europe as power prices soar", *Financial Times*, 12 December 2024. (link); NRK, "Aasland hits back at Sweden: - The government decides", 18 December 2024. (link)

5. Why renewables are bad for growth and productivity

Main points

- **Grid data demonstrates conclusively that adding wind and solar reduces grid productivity.** Generating capacity increased by 20.7% (from 87.4 GW to 105.5 GW) between 2009 and 2024, but the amount of electricity generated fell by 24.2% (from 356.5 TWh to 270.1 TWh), caused by a 37.1% decline in output per unit of capacity.

- **The fundamental economic fact of Net Zero and the energy transition is that it requires more inputs to produce less.** This explains why electricity costs have been rising and will continue to do so until renewables are no longer being added to the grid.

- Net Zero's huge capital requirements have negative macro-economic implications for the British economy, which already under-invests in productive assets by abstracting investment capital to high cost, low productivity renewable assets.

The negative impacts of renewables go well beyond the grid. The Chancellor of the Exchequer, Rachel Reeves, recently announced a second, massive tax raising budget. Reeves blamed Brexit for the OBR downgrading its assumptions on productivity growth and its knock-on effect on government borrowing. Near to non-existent productivity growth pre-dates Brexit and goes back to the 2007-8 financial crisis. **Whatever the impact of Brexit on productivity growth might be, renewable energy is unambiguously negative for both labour and capital productivity.**

The International Energy Agency's Net Zero Pathway, published in May 2021 estimates that by 2030, the number of people employed in the world energy sector will rise from 65 million to nearly 90 million in 2030, an increase of 38.5%.[29] At the same time, the higher investment requirements of renewables and other non-fossil fuels require $16.5 trillion more capital. **However, these colossal increases in inputs produce 7% *less* energy, implying a productivity-destroying one-third fall in energy output per employee.**[30]

Analysis of the British grid confirms that having more renewables progressively reduces the grid's capital productivity:

- In 2009, 87.4 GW of generating capacity, comprising only 5.1% of wind and solar, produced 356.5 TWh of electricity.[31]
- In 2024, 105.5GW of generating capacity, with wind and solar accounting for 47.9% of name-

29 International Energy Agency, *World Energy Outlook 2022*, November 2022, 77-78.

30 Batt Odgerel, Lucian Pugliaresi, and Michael Lynch, *A Critical Assessment of the IEA's Net Zero Scenario, ESG, and the Cessation of Investment in New Oil and Gas Fields*, ed. Rupert Darwall, Energy Policy Research Foundation, June 2023, xi. (link)

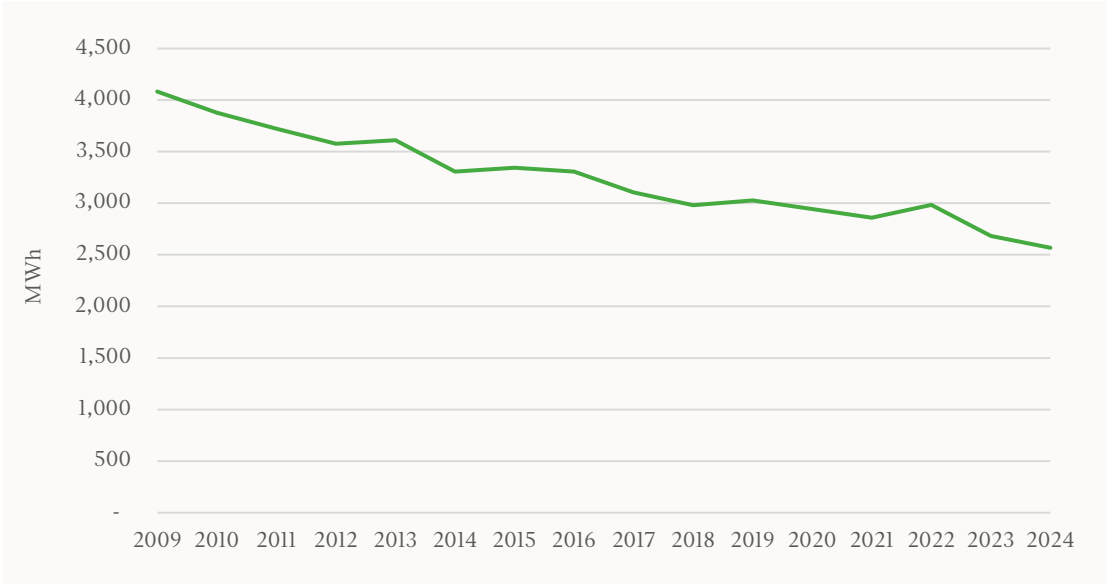
31 Net of electricity used on works, DUKES Table 5.1.

plate capacity, produced only 270.1 TWh of electricity.

In other words: **a 20.3% *increase* in total generating capacity generated 24.2% *less* electricity.**

Looking at the data another way, in 2009, before the mass deployment of wind and solar, 1 MW of generating capacity produced 4,080 MWh of electricity. In 2024, with wind and solar accounting for very nearly half nameplate capacity, 1 MW of generating capacity generated just 2,568 MWh, a decline of 37.1% (see Figure 3).

Figure 3: *Output per MW of generating capacity (MWh)*



Source: DUKES Tables 5.1 and 5.7

Due to energy policies adopted since 2007, Britain has ended up with a grid that needs more inputs of capital and labour to produce less electricity. **Producing less with more is the fundamental economic fact about mass deployment of renewable energy.** It is why adding more renewable energy results in higher electricity costs. It is as simple as that. Rising productivity cuts costs; falling productivity increases them and makes us all poorer.

If we add to this the higher infrastructure costs required to transport electricity from windfarms, often located hundreds of miles from where electricity is consumed, and from solar farms scattered across the countryside, there is very little mystery as to why British electricity prices keep rising. The renewable bargain gets worse; for the privilege of paying more, you end up with a lower quality, less reliable electrical grid.

The direct negative impacts of renewables on productivity and costs have a secondary impact on whole-economy productivity. **As higher energy costs ripple through the economy, they make businesses that use electricity as a key input (such as manufacturing) less competitive. Because these tend to have higher than average productivity, their shrinkage, due to their loss of competitiveness, reduces whole-economy productivity.**

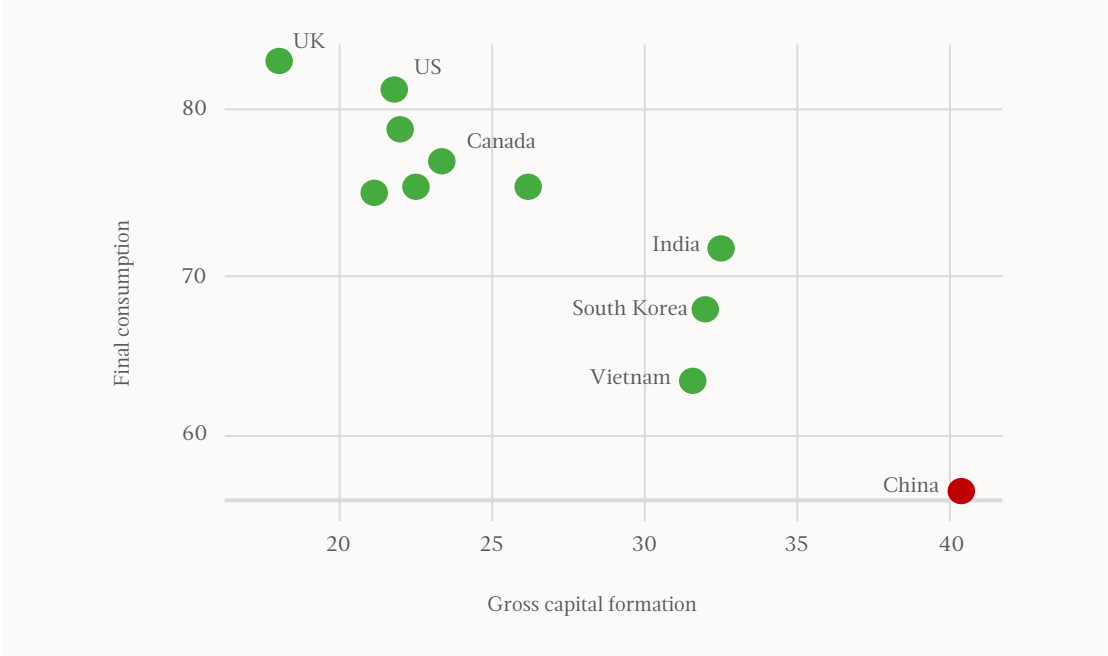
As well as crushing productivity, renewables destroy GDP. A December 2023 survey by PwC found that nearly two-thirds of businesses reported that high and volatile energy prices had reduced their ability to compete; 77% said it had forced them to increase their prices and 67% said it

negatively impacted their margins.[32]

Productivity is the long-term driver of economic growth. In turn, investment (or capital formation) is one of the key drivers of productivity growth. Chris Stark has argued that Britain should emulate China and become an "electrostate".[33] What Stark fails to understand is that Britain is at the opposite end of the macro-economic spectrum from China (see Figure 4): Britain over-consumes and under-invests, whereas China does the opposite. China has mountains of excess capital to destroy; Britain has none.

The British economy is in a macro-economic trap: it is too weak to generate the resources needed to invest for growth. When the government of a country that under-invests in productive assets force-feeds capital into assets that destroy capital, it only serves to push the economy deeper into its economic hole, condemning Britain to zero to low growth—or worse.

Figure 4: *Consumption and gross capital formation as % of GDP*



Source: Financial Times; World Bank, National Bureau of Statistics. Data for Japan, South Korea, and Vietnam as of 2023 and others as of 2024. Final consumption expenditure includes spending by households and the government.

32 PwC, *Hit the control switch: How UK industries are navigating the energy challenge* (2024), 5 (link)

33 Leake, "Britain must copy China in net zero race".

6. Energy policy and Britain's failed state

Main points

- Any new energy policy must take into account the long-standing failings in the British state's oversight and management of large capital projects, including nuclear power.
- France and Sweden had successful nuclear power programmes, while Britain's was a catalogue of poor decisions and mismanagement, and Italy rolled out smart meters at a fraction of the cost of Britain.
- Factors explaining why the British state is so bad in this domain include industrial policy masquerading as energy policy; multiple, conflicting policy objectives; and the impact of lobbying.

The return of the state in Phase Two (2007–present) resurrected many of the pathologies associated with the British state in the decades before Nigel Lawson's 1982 energy speech. These pathologies are a peculiarly British phenomenon, as other countries can succeed where Whitehall has repeatedly failed. For instance:

- In the 1970s, France and Sweden successfully implemented a nuclear power programme using American-designed reactors, while Britain's had been ensnared by its own reactor design in a programme that, along with Concorde, the economist David Henderson called "two of the three worst civil investment projects in the history of mankind."[34]
- Whitehall turned even something apparently as straightforward as smart meters into a fiasco—slammed by the National Audit Office in 2017 as running late and installation costs 50% higher than assumed by the Department, and a cost per installed meter of £374.[35] By then, ENEL, the Italian electricity conglomerate, had already installed meters in around 90% of Italian households at a cost per meter of £65.[36]

34 David Henderson, "Lecture 5: DIYE plus the Lobbies: Counting the Cost", 1985 Reith Lecture, BBC Radio 4, 8 December 1985, 5. (link)

35 National Audit Office, "Rolling out smart meters", 23 November 2018, HC 1680, 9. (link)

36 International Energy Agency, *Smart Grids Roadmap* (2011), 20. (link)

Nuclear power amnesia

The poor economics of Britain's nuclear power, revealed by privatisation, and the subsequent travails of British Energy (privatised in 1996 with £5.6bn of liabilities and a 50-60 year contract with BNFL, effectively renationalised 10 years later when it agreed to pay the Nuclear Labilities Fund 65% of its free cash flow, and the equity sold to EDF in 2008) were quickly forgotten in a warm glow of nuclear power revisionism. In their ministerial foreword to The UK's Nuclear Future in 2013, Vince Cable and Ed Davey wrote "The UK was the first country successfully to develop, deliver and safely operate nuclear power stations, meeting all the scientific, technological and industrial challenges that this involved".[37]

This assertion is hard to reconcile with the fact that Dungeness B, the first advanced gas-cooled reactor (AGR), took 22 years to build and cost more than five times its initial budget.

There are many explanations for the poor performance of the British state. In the energy field, policy failure is often the outcome of one, or a combination, of three policy missteps:

- ***Industrial policy masquerading as energy policy*:** The AGR nuclear programme and offshore wind were justified on the grounds of creating a world-leading industrial sector, but the best industrial policy is actually ensuring that British industry has cheap, abundant, and reliable energy. In the House of Commons in summer 2025, Ed Miliband justified Net Zero because he "believe[s] in Britain".[38] To misquote Samuel Johnson, energy policy jingoism is the last refuge of the policy charlatan.
- ***Multiple, often conflicting objectives*:** Whitehall typically takes a Christmas tree approach to defining policy objectives, hanging as many nice-sounding objectives upon the tree as it can bear. EMR's three objectives left affordability ("minimise costs to taxpayer and keep energy bills down") as a residual that was subordinated to climate objectives (i.e. an 80% cut in emissions by 2050 and 15% of energy from renewables by 2020), which in turn conflicted with the security of supply objective ("resilient electricity supplies to keep the lights on", see Figure 1).[39]
- ***Politics and lobbyists overriding hard analysis*:** Politics and lobbying are at the root of the smart meter fiasco. Article 13 of the 2006 EU directive on enhancing energy efficiency qualified the smart meter mandate insofar as it is "technically possible, financially reasonable and proportionate in relation to the potential energy savings".[40] A 2007 cost benefit assessment by consultant engineers Mott MacDonald found a net disbenefit of around £4bn for smart meters. Nonetheless, the 2010 Coalition Agreement pledged: "We will establish a smart grid and roll out smart meters",[41] so an August 2011 DECC made-to-order analysis conjured up a £4.9bn net benefit.[42]

37 HM Government, *The UK's Nuclear Future*, 2013, 3. (link); Alex Henney, T*he British Electric Industry 1990-2010: The Rise and Demise of Competition* (EEE Limited, 2011), 83.

38 HC Deb, 14 July 2025, vol 771, col 14. (link)

39 Department of Energy and Climate Change, *Electricity Market Reform: policy overview*, November 2021. (link)

40 Directive 2006/32/EC of the European Parliament and of the Council (repealed). (link)

41 HM Government, *The Coalition: our programme for government*, 2010, 16. (link)

42 Alex Henney, "Evidence on smart meter rollout", written evidence, SMR02. (link)

7. The three steps to energy policy success

Avoiding the errors of the past and fashioning a new policy involves three steps.

Step one: divorce climate policy from energy policy

The root cause of the failure of energy policy since 2007 is its subordination to climate policy, followed by specifying increasing amounts of wind and solar capacity despite them being bad for the grid.

Climate policy should be economy-wide, not sector-specific. Homogeneous, economy-wide climate policies are both more efficient and are far less prone to becoming prey for rent-seekers and lobbyists.

Thus, the first and most decisive step to restore energy policy sanity is to divorce climate policy and energy policy. In principle, there are three forms climate policy can take:

- A uniform tax on all greenhouse gas emissions, whatever their source; *or*
- Cap-and-trade, by creating a market in emissions allowances along the lines of the ETS; *or*
- Adaptation, which has the double advantage of improving resilience to naturally occurring climate change/extreme weather *and* keeps all the benefits in Britain, whereas the benefits of cutting emissions are gifted by Britain to the Global South, which puts little or no value on them.

Step two: define what success is

There must be absolute clarity and rigour on what the policy objective is. If a government fails at this this, it will be back in the mire, as the failures of the past amply demonstrate.

A good starting point might be Nigel Lawson's definition in his 1982 speech (see Appendix, top box). Lawson's criterion of efficiency embraces both cost and reliability. An unreliable grid simply transfers non-price costs to consumers as the costs of supply interruptions far outweigh the cost of the electricity they could not use.

Policy should be strictly technology-neutral; if applicable, specifying outputs, not inputs. Both Reform UK and the Conservatives are on the same page in pledging to drop Net Zero. At the same time, both talk up nuclear power. Nuclear is dispatchable and reliable, but, currently, it is not low cost. Its principal attribute over fossil fuels is being zero-emission, which implies the existence of a climate policy that dare not speak its name. If nuclear is the answer, it is essential:

- to be absolutely clear what question it is the answer is to; *and*
- to be clear whose answer it is—politicians' or the market's.

Step three: specify the means to achieve success

The fundamental difference between Phase One and Phase Two of energy policy is the role of the state and its relation to the market, as outlined in Chapter 2. In the first phase, the role of the state was principally to define a framework and specify the duties and powers of an independent economic regulator. In the second phase, the state took back the capital allocation function that it had given to the market, which was relegated to being a capital provider and asset operator. At the same time, many of the economic risks of asset ownership were transferred from investors to consumers.

Key principles to help guard against this are:

- aligning ownership and control; *and*
- allocating risk to the party best able to manage it.

The next government will be faced with the dire state of Britain's generating capacity, in which "powering past coal" saw 23.7 GW of dispatchable capacity come off the grid without any net new dispatchable capacity to replace it, as outlined in Chapter 3.

The quantum and timelines mean that new nuclear is not the answer. There is 5.88 GW of existing nuclear that is mostly old and inefficient compared with Hinkley Point C's 3.2 GW which is unlikely to become fully operational before 2030. This leaves CCGTs and/or coal, but the AI-driven CCGT-boom in the US means at least a three-year wait to buy a gas turbine from one of the big three manufacturers.[43]

This becomes all the more pressing if a future government succeeds in cutting costs. Prices are unlikely to fully reflect the fall in costs without an increase in supply. **Put another way, if the aim is to make energy more affordable, you need a large increase in dispatchable capacity as soon as possible.**

43 Harry Dempsey, A. Anantha Lakshmi, and Malcom Moore, "The fallout from the AI-fuelled dash for gas," *Financial Times*, 22 October, 2025. (link)

8. Clearing the decks: recommendations and conclusion

Main points

- Implementing a new energy policy requires **removing legislative and institutional obstacles** which would otherwise obstruct it, as well as minimising interference by the courts, especially around planning
- **Policy capture by vested interests and Whitehall's heavy investment in one of the worst public policy disasters since 1945, are sufficient cause for wholesale institutional change.** This should include closing down and replacing the Department of Energy Security and Net Zero and replacing Ofgem's senior leadership.
- **A New Generation taskforce must prioritise addressing the generating gap left by the non-replacement of prematurely retired coal-fired capacity.** New capacity is needed to restore a healthy capacity margin. Cutting energy prices requires having more supply.

Legislative repeals and amendments

From 2008 onwards, Parliament passed legislation to lock-in decarbonisation and prevent backsliding. The principal example is the Climate Change Act 2008. The courts and the civil service will prevent a new government implementing sane energy policies for as long as Section 2 of the Climate Change Act, which places a duty of the government to pursue Net Zero, remains on the statute book.

Subsequent legislation stripped Ofgem of its independence and turned economic regulation into an arm of Whitehall, a process that had started with New Labour's Utilities Act 2000 (see Appendix). The process culminated in the Energy Act 2023, when the Sunak government foolishly accepted Chris Skidmore's recommendation in his *Mission Zero* independent review to incorporate the Government's decarbonisation target in Ofgem's remit.[44]

| 44 Chris Skidmore, *Mission Zero: Independent Review of Net Zero*, 26 September 2022, 73. (link)

Table 2: *Repeals and amendments*

Act of Parliament	Areas for repeal or amendment
Climate Change Act 2008	• Section 2, which contains the decarbonisation target, the ratchet (that precludes it being moderated), and imposes on the Secretary of State to pursue it • Section 15, which imposes a duty on the Secretary of State to take action to meet targets in relevant carbon budgets
Energy Act 2008	• Section 83, which amends Ofgem's duties to have regard to the interests of current and future consumers in the achievement of sustainable development
Energy Act 2010	• Sections 16 and 17, which amends Ofgem's legal duty from being pro-consumer to promoting the interests of current and future consumers in the reduction of greenhouse gas emissions • Restore Ofgem's duty to promote effective competition
Energy Act 2023	• Section 6, which requires Ofgem to assist the Government in meeting its decarbonisation targets
Town and Country Planning Act 1990	• Amend to preclude local authorities and any other planning authorities from considering the impact of greenhouse gas emissions on whether to grant planning consent
National Planning Policy Framework	• Remove all references to supporting the transition to a low carbon future and the reduction of greenhouse gas emissions

Institutional reforms

Abolish and replace the Department of Energy Security and Net Zero

In his cost of energy review, Dieter Helm pointed out that the greater the complexity of interventions in the energy sector, "the greater the scope for capture by rent-seeking lobbyists and interest groups".[45] **Sadly, the energy department, in its current incarnation as the Department of Energy Security and Net Zero, as in its previous ones (BEIS and DECC), has allowed policy to be totally captured by vested interests.** Far from the Whitehall myth of "speaking truth to power"—which would mean exposing the rotten economics of renewables for what they are — the department has overseen far and away the worst policy disaster since 1945, all the while being a cheerleader for it.

Rather than attempt to reform the department and to make it capable of developing and implementing policies needed to reverse the mess it created**, a new government should create a new, small, high-quality, policy-only department**, retaining only a skeleton staff to support the Secretary of State in discharging his or her statutory duties and its pipeline security and statistical/data collection functions.

Reform Ofgem and replace its leadership

Ofgem, too, has been completely captured by the climate lobby. After the Sunak Government announced its intention to give Ofgem a statutory Net Zero duty, its chief executive, Jonathan

45 Helm, *Cost of Energy Review*, 35.

Brearley, argued that there was a total alignment of consumer interest in low bills and Ofgem's new duty: "net zero is the best option, not only from a climate perspective, but to ensure a secure, low-cost energy future."[46] This is pure climate propaganda. If what Brearley says is true, as a matter of logic, adding a Net Zero duty is pointless, as promoting the consumer interest in low energy bills would automatically lead to Net Zero.

Removing Ofgem's legal duties to support climate policy is necessary but not sufficient. There is a personnel problem.

The captivity to lobbyists and rent-seekers and being in thrall to Net Zero ideology are so pervasive that a wholesale clear out of Ofgem senior leadership is needed to ensure that Ofgem acts as a pro-consumer, pro-competition regulator.

New generation task force

Finally, a new government will be confronted by Britain's perilously tight capacity margin and the failure to invest in new dispatchable capacity to replace the premature retirement of coal-generating capacity. Replacing around 20 GW of missing dispatchable capacity needs the state to act and take the lead.

Rather than the new Energy Department, which should revert to being a purely policy department as it had been in Nigel Lawson's day, this should be undertaken by a new, single-purpose body staffed with commercially-experienced executives, operating within a tightly defined mandate outside normal Whitehall processes.

The Vaccine Task Force, incorporating the lessons Kate Bingham has spoken of, is one model that could be emulated. Another is the Office of Passenger Rail Franchising (OPRAF), which awarded 25 rail franchises in less than two years as part of the privatisation of British Rail in the mid-1990s. Assessment on value-for-money grounds should be given to selective use of the government's balance sheet via Ed Miliband's Great British Energy

Conclusion

Reviewing the two phases of energy policy since 1990, it is clear that Nigel Lawson was right. The market and privatisation worked. The state taking back control failed, which is why Britain has ended up with the highest electricity prices in the world.

However, the challenge for an incoming government is greater than the Thatcher Government faced at the end of the 1980s in restructuring the electricity sector and readying it for privatisation. The biggest challenge then was what to do with the nuclear power stations and their decommissioning liabilities, a task it bungled. Nonetheless, the CEGB was a good steward of its generating assets. It had an ingrained tendency to over-forecast demand to maintain a high-capacity margin (the excess of generating capacity over peak demand) of 20-30%. This excess capacity helped lubricate the success of privatisation.

| 46 Ofgem, "Ofgem welcomes proposed legal mandate to prioritise the UK's 2050 net zero target", press release, 7 June 2023. (link)

The legacy of EMR and Net Zero is far less benign. The generating capacity margin is tight to non-existent (hence the reliance on imports). Around half of generating capacity (nameplate basis) is intermittent wind and solar, which operationally makes the grid much harder to manage. Economically, renewables siphon off value from the grid in the form of artificially high prices, while rendering unprofitable future investment in the dispatchable capacity that is needed to keep the lights on.

Using all legal means to untangle this toxic web is a hugely complex task that will be fiercely opposed by vested interests in the industry, Whitehall, the City, and their allies in the media. But it is a task that is essential for Britain's future security and prosperity.

Appendix: Timeline of the two phases of energy policy (1990 – 2019)

Phase One: *The state lets go – Privatisation, liberalisation, and the retreat of the state (mostly)*

Conservative	
1982	• Nigel Lawson's foundational energy policy speech: "I do not see the Government's task as being to try to plan the future shapes of energy production and consumption... Our task is rather to set a framework which will ensure that the market operates in the energy sector with a minimum of distortion and energy is produced and consumed efficiently."[47]
1988	• *Privatising Electricity* White Paper published. Preparations for privatisation revealed nuclear energy was not economical. CEGB to be unbundled into 12 regional electricity companies (RECs), National Grid, and a generating duopoly, the larger one designed to carry the nuclear assets/liabilities. • Government recognises that the aging Magnox reactors not floatable. • Government imposes a fossil fuel levy on RECs, forcing them to buy uneconomic nuclear power. • Generators forced to sign 5-year purchase contracts with British Coal to protect coal mining jobs.
1989	• Decision to pull the rest of the nuclear power stations from the privatisation package. Although the rationale for creating a privatised generating duopoly had gone, it was too late to split the generators into ten new companies. The generating duopoly was the biggest flaw in electricity privatisation which meant high wholesale prices persisted for longer.
1990	• RECs, each with stakes in the National Grid, privatised. • European Commission revokes its directive restricting the burning of natural gas for power generation. • Stephen Littlechild, the electricity regulator, lifts bar on RECs investing in generating capacity, sparking Britain's dash for gas. By the end of the decade, gas accounted for one third of electricity generation.
1991	• 60% of National Power and PowerGen privatised.
1992	• Michael Heseltine induces generators to enter into further 5-year contracts with British Coal to avoid politically costly pit closures
Labour	
1997	• Windfall tax on the privatised utilities in the electricity sector, reflecting excess shareholder returns from the RECs being privatised with too little debt and the generators' high electricity prices thanks to their duopoly.
1998	• Peter Mandelson's Energy White Paper in response to Labour's coal crisis, caused by the expiry of Heseltine's coal contract reiterates moratorium on approval of new gas-fired power stations: "The policy will be short-term, temporary and aimed specifically at protecting diversity and security of supply while the distortions [!] in the market are removed, so that the final result is a competitive market that can operate more vigorously and effectively."[48] • The White Paper and the DTI's Public Service Agreement commits the Government to low energy prices.
2000	• Utilities Act gives the Government power to issue guidance to Ofgem on social and environmental issues. "One of the worst examples of poor drafting in recent times", according to Dieter Helm.[49]
2001	• EU Large Combustion Plant Directive introduced to curb emissions of acid rain precursors from coal-fired power stations. Power stations opt out of meeting emissions limits capped to 20,000 hours of further operation (superseded by the 2016 Industrial Emissions Directive). 13 power stations, constituting around 15% of British capacity, opt out.

47 Nigel Lawson, "Speech to International Association of Energy Economists", 1982, currently unavailable online.

48 DTI, *Energy White Paper*, para 2.43.

49 Dieter Helm, *Energy, The State, and the Market: British Energy Policy since 1979* (Oxford: Oxford University Press, 2003), 292.

Phase Two: *The state takes back control*

Labour	
2007	• European Council agrees binding 20% renewable target by 2020. The UK's 15% target means it has the largest percentage point increase of any member state from its 1.3% baseline and incurs a quarter of the cost of meeting the EU's targeted emissions reduction. • A last hurrah for the vanishing market in Alistair Darling's Energy White Paper: "We believe a market-based approach within a clear policy framework. provides an effective way to help us manage this uncertainty and deliver our energy policy goals. This is because companies are best placed to weigh up and manage the complex range of interrelated factors affecting the economics of energy investments."[50]
2008	• Climate Change Act: 60% decarbonisation target raised to 80% during passage through Parliament; imposes a legal duty on the government to pursue the Act's Section 2 target, thereby subordinating all other policy goals—such as economic growth, national security, employment, living standards, and poverty reduction—to decarbonising the economy. • Ed Miliband's Energy Act amends Ofgem's legal duty to be pro-consumer by inserting a duty to promote the interests of current and future consumers to the achievement of sustainable development (i.e. decarbonization).
2010	• A second Miliband Energy Act downgrades Ofgem's duty to promote competition by requiring it to first consider alternatives to competition and introduces a new duty to promote the interest of current and future consumers in the reduction of greenhouse gas emissions. • HMT/DECC Energy Market Assessment dismisses the central buyer option to reduce electricity sector emissions because it would have to take decisions on optimum levels of capacity and generation mix "which may not be straightforward. The agency's decisions are important because it would control all investments through their tendering process … [T]here is a high risk that the agency may not be as well placed as suppliers in a competitive market to correctly to correctly determine the need for generation investment."
Conservative/Lib Dem Coalition	
2010	• George Osborne issues a Treasury consultation on a proposal to support the low price of CO2 Emissions Allowances under the EU's Emissions Trading Scheme (ETS): "The level of the carbon prices and its uncertainty is one of a number of factors affecting investment in low-carbon generation."[51]
2011	• Electricity Market Reform (EMR): adopts of the central buyer model, previously rejected by the Labour government as too statist, and a state-run capacity market to procure capacity to cover the intermittency of renewables. • EMR defines the principal challenge of energy policy as mobilising private sector capital to fund state-specified generating capacity. To this end, replaces Renewable Obligation Certificates (ROCs) with Contracts for Difference (CfDs) whch guarantee the price of wind and solar output irrespective of market conditions, turbocharging investment in intermittent renewables.
2013	• Energy Act legislates EMR and carries on where Ed Miliband left off by requiring Ofgem to carry out its functions in the manner best calculated to further the delivery of government-specified policy outcomes. From being an independent regulator, Ofgem is now a wholly-controlled subsidiary of Whitehall. • Carbon Price Support (a unilateral carbon tax on top of the ETS) introduced at an initial rate of £4.94 per tonne of CO2 rising to £18.08 per tonne in 2015. The CPS drives up imports of non-taxed electricity and drives coal off the grid. • Agreement with EDF for construction of Hinkley Point C nuclear reactor at a projected capital cost of £5m per MW making it the world's most expensive power station. "One of the worst ever signed by a British government", according to energy analyst Peter Atherton.[52]

50 HM Government, *Meeting the Energy Challenge*, White Paper, May 2007, 16

51 HM Treasury, *Carbon price floor: support and certainty for low-carbon*, December 2010, 5. (link)

52 Peter Atherton, "Why has Britain signed up for the world's most expense power station?" *The Spectator*, 22 February 2014. (link)

Conservative	
2015	• Amber Rudd's "New Direction for Energy Policy" speech (or rather, the "new direction not taken" speech). Rudd approvingly cites Nigel Lawson's 1982 speech and criticises EMR and her Lib Dem predecessors: "We now have an electricity system where no form of power generation... can be built without government intervention... I inherited a department where policy costs on bills had spiralled. Subsidy should be temporary, not part of a permanent business model... We need to work towards a market where success is driven by your ability to compete in a market, not by your ability to lobby government."[53] • Rudd called out the intermittency of renewables: "In the same way generators should pay the cost of pollution, we also want intermittent generators to be responsible for the pressures they add to the system when the wind does not blow or the sun does not shine. Only when different technologies face their full costs can we achieve a more competitive market." • Conditional pledge to restrict coal use from 2023 and fully phase out coal by 2025: "We'll only proceed if we're confident that the shift to new gas can be achieved within these timescales." The coal phase-out occurred more rapidly than Rudd envisaged, but investment in replacement gas capacity didn't materialise.
2017	• Conservatives' June 2017 election manifesto pledges delivery of "competitive and affordable energy costs following a new independent review into the cost of energy."[54] • Dieter Helm's cost of energy review (October) – comprehensive demolition of energy policy as pursued by all three parties, highlighting the danger of policy capture by vested interests: "It is not sustainable, and therefore it will not be sustained."[55] Proposes Equivalent Firm Power capacity auctions so that wind and solar bear their intermittency costs: "Intermittent generators... do not face the full transmission, distribution and back-up capacity costs they impose on the system... In the current model, the intermittent generators have no incentive to minimise these costs."[56] • Theresa May announces that the Government will legislate an energy price cap; first comes into effect in January 2019.
2018	• Greg Clark ignores Helm's review, claiming that, by the mid-2020s, green power would be the cheapest power: "It can be zero subsidy."[57] Dismisses Helm's (and Rudd's) proposal that wind and solar internalise their intermittency costs, while providing a real-time example of policy capture: "There is a question of industrial strategy – our current support system for offshore wind, for example, has produced great benefits. It would be unwise to disturb this ecosystem right now with a major reorganisation."
2019	• Climate Change Act target raised to 100% by 2050.

53 Amber Rudd, "Amber Rudd's speech on a new direction for UK energy policy", GOV.UK, 18 November 2015. (link)

54 Conservative and Unionist Party, "Forward, Together: The Conservative and Unionist Party Manifesto 2017", 12. (link)

55 Helm, *Cost of Energy Review*, 6.

56 Helm, *Cost of Energy Review*, 192.

57 Greg Clark, "After the trilemma – 4 principles for the power sector", GOV.UK, 15 November 2018. (link)

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January 2026

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