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GREEN DEALS IN THE EU

Lessons for the United Kingdom

Magnus Henrekson, Christian Sandström and Mikael Stenkula
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About the authors

Magnus Henrekson is a Senior Research Fellow at the Research Institute of Industrial Economics (IFN) in Stockholm, Sweden. Until 2009, he was Jacob Wallenberg Professor of Economic Policy at the Stockholm School of Economics. His primary research focus is entrepreneurship economics and the institutional determinants of the business climate.

Christian Sandström is Associate Professor of Technology Management from Chalmers University of Technology, where he also received his doctoral degree (2010). His research concerns innovation policy and the interplay between technological and institutional change, and he has authored numerous books on 'green bubbles'. He is currently affiliated with Linnaeus University.

Mikael Stenkula is Associate Professor of Economics and Research Fellow at the Research Institute of Industrial Economics (IFN). His primary research areas are entrepreneurship economics and taxation. He also serves as the executive secretary of the Global Award for Entrepreneurship Research, the foremost global award for research on entrepreneurship.

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Summary

- Since the 2008 financial crisis, environmental policy has shifted away from simply managing negative externalities and gradually converged with regular industrial policy. Various 'green deals' have been launched around the world with the aim of achieving a combination of economic and environmental development.

- Economists, such as Mariana Mazzucato, have gained traction among European policymakers, arguing that governments should not only focus on correcting potential market failures but should also formulate and finance comprehensive public missions to steer innovation towards proposed solutions and technologies.

- In 2020, the European Union launched its Green Deal. Six years later, investments in hydrogen-based projects have collapsed, and electricity prices are twice as high as in the U.S. and China.

- The United Kingdom has followed a similar trajectory, with comparable results in terms of declining industrial competitiveness and soaring electricity prices.

- So far, the EU Green Deal has proved to be expensive, fragmented and ineffective. However, this does not mean that there are no alternative ways to reconcile economic development with environmental considerations.

- The green transition should be guided by market price signals rather than by directional industrial policy. Such a framework could be achieved with a) a uniform and **comprehensive emissions trading system** that in principle covers the entire economy, and b) **technology neutrality** on the part of government without sector targets, industry support, or industry-specific subsidies.

Foreword

If your aim is to be famous, becoming an economist is probably not the best career choice. Economists very rarely become household names.

However, it is, in fact, quite easy for an economist to attain some name recognition, or even to become a minor celebrity. All you need to do is promote a message which deviates from the majority opinion within the economics profession but which is popular with policymakers, opinion formers, and the wider public. Crucially, you need to turn your disagreements with other economists into a strength by presenting yourself as a maverick who rebels against the conventional wisdom. That way, you get the best of both worlds: you get the glamorous image of the non-conformist, but none of the social cost that comes with actual non-conformism. Because your 'unpopular' message is actually not unpopular at all. It is just not widely shared within your own profession. But you are, in fact, telling sympathetic policymakers, opinion formers, and sections of the public what they want to hear.

A good example of this is Thomas Piketty, who, at the height of his fame, was often described as a 'rock star economist'. Piketty's claim that capitalism has an in-built tendency towards accelerating wealth inequality and his support for a wealth tax as a remedy is not a majority opinion among economists. But a book which taps into fashionable anti-market sentiment will rarely fail to sell well.

Another example is Donald Trump's economic advisor Peter Navarro, one of the very few economists who believe in protectionism. Navarro's views would certainly make him an

outlier at an economics conference – but this does not make him a 'free thinker' who goes 'against the grain'. His views go very much with the grain of public opinion, as well as, of course, the current administration of the United States.

Similarly, the economist Isabella Weber achieved some fame during the recent bout of high inflation by pushing the idea price hikes are driven by corporate greed ('greedflation') and that the solution is price controls. Weber received some pushback from fellow economists, which her supporters saw as evidence of her bold, unorthodox thinking. But her ideas are wildly popular among the wider public and among anti-capitalist intellectuals.

Last but not least, Mariana Mazzucato has ruffled a few feathers within her profession with her advocacy of an activist, state-led industrial policy. But it is not surprising that there is an audience for Mazzucato's message and that political decision-makers have been particularly receptive. Friedrich Hayek once said that 'the curious task of economics is to demonstrate to men how little they really know about what they imagine they can design.' Mazzucato does the precise opposite of this. She is effectively telling economic policymakers that their confidence in their abilities to design economic life is fully justified and that they should ditch the false modesty.

An economist with Hayekian sympathies will urge economic policymakers to show some epistemic humility. Their main message to them will be to back off and not make a mess. Mazzucato's message to economic policymakers is a much more flattering one. She is, in effect, telling them that they are the real wealth creators and that the economy needs more of their strategic wisdom and vision. Is it so surprising that policymakers tend to find the latter message more attractive?

But while there has undoubtedly been a revival of industrial policy since the publication of Mazzucato's *The Entrepreneurial State,* we should not overstate the influence of any one particular author. If we define 'industrial policy' as an attempt to shape the sectoral structure and composition of the economy, Britain and other Western economies have always had industrial policies, if not on the scale that Mazzucatoites would like to see.

Economic policy debates have very little to do with what mainstream economists approve or disapprove of. The fact that the vast majority of mainstream economists disapprove of rent controls does not stop that idea from popping up again and again and, in some places, becoming actual policy. The fact that the vast majority of mainstream economists disapprove of tariffs has not stopped the Trump administration from hiking the effective average tariff rate by more than ten percentage points.

But it is fair to say that, for a while, British politicians were somewhat reluctant to use the term 'industrial policy', or if they did, they felt the need to distance themselves from earlier versions. ('We are not picking winners, but…'; 'There will be no return to the failed policies of the 1970s, but…'.) That reluctance has disappeared. Industrial policy enthusiasts will now use that term proudly.

Curiously, though, they still act as if we were starting from a position of laissez-faire, in which the state plays no role in economic life beyond enforcing general rules. This was not true before Mazzucato's rise to fame, and it is certainly not true today. Industrial policy enthusiasts are not challenging the status quo. They are the status quo. We already have an entrepreneurial state, or at least an activist, interventionist state that is trying to play entrepreneur.

As Magnus Henrekson, Christian Sandström and Mikael Stenkula show in this paper, the results of this industrial policy revival suggest that the earlier scepticism about it was fully justified.

Mazzucatoites like to present themselves as the pragmatic voice which defies a dogmatic anti-state orthodoxy. This framing is inaccurate. The argument against industrial policy is not an absolutist belief that governments never get anything right. The argument is simply that, in the aggregate, and over the longer term, an entrepreneurial state will make worse decisions than actual entrepreneurs. The state lacks the right incentives, and it does not possess the requisite knowledge to improve upon – let alone replace – the market discovery process.

In any case, policymakers will likely always be prone to overestimating their abilities to improve upon market outcomes and 'correct' the decision of private investors. Big projects will always have a certain attraction to politicians looking for a mission. Therefore, we really do not need to come up with any economic theories to egg them on even further and provide them with rationalisations for doing what they want to do anyway. We should challenge the Mazzucatoite status quo and return to a general presumption against industrial policy. If governments really want to engage in industrial policy projects, they will find a way to do that no matter what, even with such a presumption in place. The fact that this will raise eyebrows at the next economics conference is not going to be much of a deterrent. But at least, it imposes an additional hurdle, which will keep some of the worst impulses of the political process in check.

KRISTIAN NIEMIETZ
Editorial Director, Institute of Economic Affairs
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Introduction

Environmental policy has traditionally been about managing the negative externalities that result from various types of economic activities. Politicians have historically used economic instruments, regulations, or outright bans to try to counteract these problems. Over time, this approach has contributed to a significant reduction in emissions of many environmental toxins, such as lead, sulphur dioxide and nitrogen oxide (Grafström 2026).

However, this traditional view of environmental policy has increasingly been called into question. Since the financial crisis, environmental policy has gradually converged with regular industrial policy. Various versions of green deals have been launched around the world with the aim of achieving a combination of economic and environmental development[1].

Economist Mariana Mazzucato played a leading role in promoting this renewed policy orientation, attracting broad attention in the United Kingdom and across Europe with her 2013 book *The Entrepreneurial State*. In the United States, prominent scholars – most notably Harvard professor Dani Rodrik – have similarly argued for a revival of more targeted, sector-specific industrial policies designed to tackle clearly defined challenges. Emphasising the urgency of these challenges, such more interventionist and focused approaches are often framed as 'missions' or 'moonshots'.

1 See Stenkula (2026) for an overview.

The idea is that large-scale public initiatives, such as the US moon landing project, are needed to meet today's 'grand challenges'. The focus is not only on correcting potential market failures but also on actively creating new markets and pointing the way towards future technological solutions. Mazzucato launched the concept of 'mission-orientated innovation policy', which refers to a policy where governments and their agencies formulate and finance comprehensive public missions to steer innovation towards proposed solutions and facilitate collaboration between the public and private sectors (Mazzucato 2021)[2].

This line of thinking has motivated policymakers and institutions around the world to pursue ambitious green industrial strategies, often framed as green deals or 'moonshots'. European Commission President Ursula von der Leyen (2019) famously described the European Green Deal as Europe's 'man on the moon moment', while US Secretary of Energy under the Biden administration, Jennifer Granholm (2022), referred to the fight against climate change as 'our generation's moonshot'.

The United Kingdom presents no exception. Fossil energy sources such as coal and gas have been shut down and replaced by weather-dependent energy sources and substantial electricity imports, in part from France's large nuclear fleet. Wind power accounted for about 1% of electricity generation in 2000. By 2024, about 30% of the country's electricity came from wind. In parallel, electricity consumption has declined by a whopping 23% since 2005[3]. In large part this is explained by a shrinking industrial sector where traditional heavy manufacturing

2 We have previously analysed and evaluated this trend more generally, both ourselves and by mobilising a large number of other scholars (Wennberg and Sandström 2022; Henrekson et al. 2024a).

3 See Fahlén et al. (2026) for more details.

(steel, chemicals, paper and metal production) has declined or relocated overseas.

In many other regards, the United Kingdom has implemented policies similar to the ones in the EU. The EU Emissions Trading System (ETS) has been replaced by the UK ETS. Government resources have been allocated to specific technologies such as Carbon Capture and Storage (CCS), hydrogen and low-carbon aviation fuels. Goals have also been set to phase out new petrol and diesel cars.

Despite growing interest and increasing resources expended, many of these initiatives have so far been implemented with relatively limited critical scrutiny – direct evaluations are often remarkably absent. Although individual studies have pointed to problems in specific sectors – such as the attempts to transform the steel industry (Sundén and Henrekson 2024; Henrekson and Sandström 2023) and the economic viability of Swedish wind power (Sandström and Steinbeck 2025) – the literature lacks a more comprehensive analysis adopting a holistic approach to the phenomenon of green deals. Given that the EU has already invested heavily in supporting the goal of climate neutrality and intends to continue directing a large part of the Union's resources towards targeted environmental and industrial initiatives, this is serious and remarkable.

In a new collective volume that we have edited (Henrekson et al. 2026), green deals are analysed both theoretically and empirically. In this report we summarise the volume's most important conclusions. Our overarching argument is that the EU Green Deal is failing not because decarbonisation is undesirable, but because the 'Green Deal Model' relies on mission-orientated, technology-specific industrial policy that systematically magnifies policy failure. The key lesson for the

United Kingdom is therefore institutional rather than sectoral. Climate policy should rely primarily on broad, technology-neutral price signals and avoid overlapping instruments and targeted support schemes that invite capture and misallocation.

To substantiate this argument, we first define green deals and explain why they differ from conventional environmental policy. We then synthesise the volume's evidence into eight recurring failure mechanisms, illustrating each with concrete cases. Finally, we derive policy implications for the United Kingdom and outline alternative strategies consistent with emissions reduction and long-run competitiveness.

The EU Green Deal

In December 2019, the European Commission presented the EU Green Deal, a package of regulations and policy measures aimed at combating climate change while maintaining the EU's competitiveness as well as its social and political sustainability. The overarching goal is to reduce greenhouse gas emissions and make the EU the first climate-neutral region by 2050. To accelerate the process, an interim target was also set to reduce greenhouse gas emissions by 55% by 2030 relative to 1990 levels. This interim target was supplemented by additional support measures and regulations within the framework of the 'Fit for 55' package, which was presented in July 2021. The European Green Deal can be seen as an umbrella for all the policy decisions and regulations considered necessary to achieve climate neutrality by 2050.

A central part of the Green Deal concerns investments. The EU launched an ambitious plan early on to mobilise EUR 1,000 billion during the first ten years of the Deal (European Commission 2020a). Many of the initiatives taken by Brussels are intended to be matched by additional public support at the national level. The initiatives have gradually been broadened, and it is now impossible to list exhaustively all the measures covering different sectors, companies, technological solutions and products.

The Green Deal includes reforms and measures covering a wide range of areas such as energy, transport, manufacturing, agriculture and finance and is supported by various forms of large-scale investment programmes designed to attract both

public and private capital. Support can take many forms, such as loans with favourable terms, credit guarantees, subsidies or direct grants. As the EU has no right of taxation, it cannot use investment or production tax credits to stimulate the green transition, something that has been applied in other parts of the world, not least in the United States. However, individual Member States can use tax credits provided that this is compatible with EU regulations.

Renewable hydrogen occupies a special position among the priority technology areas. Hydrogen is often highlighted as an alternative to fossil fuels in sectors where electrification is either not possible or cannot be sufficiently implemented before 2050. Steel and chemicals are particularly highlighted. The Commission's hydrogen strategy sets the target for the EU to have an electrolysis capacity of at least 40 GW and an annual production of up to 10 million tonnes of renewable hydrogen by 2030 (European Commission 2020b)[4].

The EU has also set targets for offshore wind power equivalent to 60 GW by 2030 and 300 GW by 2050, which can be compared to the EU having only 12 GW of installed offshore wind capacity in 2020 (European Commission 2020c). To put this into perspective, it is worth noting that the target for 2050 is almost five times the installed capacity of France's 56 nuclear reactors, which amounted to approximately 63 GW in 2025.

Solar energy has also taken on a more prominent role. As part of the EU's solar energy strategy, measures have been introduced

4 40 GW corresponds to the capacity of 25 nuclear reactors of the same size as Finland's new OL3 reactor. However, producing 10 million tonnes of hydrogen by electrolysis requires approximately 500 TWh of electricity, which corresponds to the annual output of 40 modern nuclear reactors. Currently, France's 56 nuclear reactors produce approximately 360 TWh per year.

to simplify permission processes, expand the use of rooftop solar panels and strengthen domestic solar panel production (European Commission 2022). By mid-century, solar and wind power together are expected to form the backbone of the Union's electricity supply.

Reducing emissions from the transport sector is another central part of the Green Deal. The EU has adopted new CO_2 standards for cars and light trucks. Initially, the policies stated that all new passenger cars and light vehicles registered from 2035 must be emission-free (European Commission 2023). As of early 2026, the original plan for a complete ban on new fossil fuel cars has been modified. The EU is now aiming for a 90% emissions reduction target, allowing some new petrol/diesel cars, hybrids and vehicles using e-fuels/biofuels to be sold, while still aiming for a mostly zero-emission fleet transition by then, thanks to industry lobbying for flexibility[5].

However, the Green Deal is not only aimed at climate neutrality; the hope is also that all these initiatives will contribute to a reversal of the recent relative weakening of the European economy and strengthen the EU's long-term competitiveness. Since the 2008–2009 financial crisis, the EU has gradually fallen behind both China and the United States. The seriousness of this decline is underlined by former ECB President Mario Draghi's report to the European Commission (Draghi 2024).

5 The additional 10% should be offset by using low-carbon bio- or e-fuels and/or green steel in car manufacturing.

Broadly speaking, green deals explicitly position policymakers as central drivers of transformative change. Mazzucato and colleagues provide a representative formulation capturing this emphasis:

> Moving to a greener low carbon economy means redirecting all sectors and all actors — public, private and civil society— towards economic growth in a sustainable and inclusive direction. (Kattel et al. 2021: 18)

Overall, the Green Deal constitutes a comprehensive combination of legislation, policy instruments and supply-orientated measures where certain technologies are given special priority and offered targeted, long-term support. Despite the considerable resources allocated and the profound economic consequences of the Green Deal, its long-term effects have not been subject to systematic and critical scrutiny.

Eight reasons why the Green Deal is failing

In Henrekson et al. (2024b), we identified seven reasons why major industrial policy initiatives (missions) rarely work as intended. All these problems are also highly relevant to the initiatives included in the EU Green Deal. In addition to these problems, the behavioural economics aspect of green deals is also highlighted. We will now briefly describe and illustrate the eight fundamental problems.

Green deals cannot solve complex problems

Climate change and related environmental challenges are 'wicked problems' (Rittel and Webber 1973; Nelson 1977), ie complex and systemic problems with no simple solutions.

Germany's *Energiewende* (Deshaies 2026) and the premature shutdown of the country's 17 nuclear reactors (Schnellenbach 2026) illustrate the difficulties of green missions as a tool for solving complex environmental and climate-related problems[6]. The social and economic consequences of the nuclear phase-out in Germany are significant and include declining industrial competitiveness, dependence on Russian (now American) gas,

6 Germany's *Energiewende* is a large-scale, long-term strategy to transform the country's energy system from nuclear power and fossil fuels to renewable energy, with the goal of achieving carbon neutrality by 2045 through energy efficiency and a massive expansion of wind, solar and hydroelectric power.

dramatically increased electricity prices (Karlsson 2025) and increased CO_2 emissions and other pollutants (Kaariaho 2025; Renuart and Li 2025).

Politicians and government agencies are not exempt from self-interest

Many political decisions are not based solely on well-informed altruistic motives but are shaped – just like business activities – by self-interest. A telling example is the ethanol car case in Sweden, where a sitting minister maintained close ties to interest groups that profited from a growing domestic ethanol industry (Björnemalm and Sandström 2026).

Decision-makers lack sufficient information for adequate policy-making

The empirical cases in the volume show that politicians often lack the information needed to design green deals in an effective and functional way. A telling example is Hellstrand and Gärdebo's (2026) analysis of how dietary recommendations based on 'the planetary diet' have been uncritically adopted by the national health authorities, leading to misguided or even harmful guidelines.

Green deals lead to rent-seeking and clientelism

Several of the contributions show how special interests can influence the design of green support schemes to their own advantage. The ethanol case (Björnemalm and Sandström 2026) shows how the Swedish farmers' cooperative organisation successfully secured political support and ensured that decisions, even at the EU level, would benefit Swedish farmers, despite technical and economic realities arguing against this type of ethanol use. The steelmaking startup Stegra's enormous investments in manufacturing fossil-free steel using hydrogen in Boden show how the initiators managed to persuade governments and authorities to support the project, despite lacking experience in steel production. Moreover, cost-benefit analyses show that the social value will be negative even if the project turns out to work technically and be privately profitable (Johansson and Kriström 2026). As Muldoon and Yonai (2023, 2026) point out, idealists and cynical opportunists or outright fraudsters ('Bootleggers and Baptists'; Yandle 1983) can often unite around misguided policies despite diametrically opposed motives.

Green deals distort competition

Baumol (2002) describes modern capitalism as a system of oligopolistic competition in which large companies try to outdo each other through innovation. Public 'green initiatives' often run counter to this competitive logic by selectively favouring specific technologies and company groups.

Renewable energy sources such as solar and wind, for example, have received extensive public support without having to internalise more than a small fraction of their system costs (Fahlén et al. 2026). At the same time, the phase-out of nuclear power in Germany and, to some extent, in Sweden was driven by political decisions rather than market realities.

Incentives are distorted

When the state assumes risks through loans, credit guarantees or innovation subsidies, a moral hazard arises. Companies take greater risks when someone else, such as taxpayers or large pension funds, bears the bulk of the cost. The Swedish battery startup Northvolt's failed ventures around the world (Sandström 2026) and attempts to produce steel using hydrogen (Johansson and Kriström 2026) are salient examples.

Opportunity costs are ignored

Many large-scale green initiatives ignore opportunity costs. Resources spent on producing fossil-free hydrogen, for example, could have been spent on other technologies or sectors with greater potential climate benefits. When evaluating the effectiveness of subsidies, these costs are often ignored, which increases the risk of misallocation. Johansson and Kriström (2025) provide a telling example of how the social value of a project can become strongly negative even if it breaks even, when the value of the alternative use of resources is taken into account.

Green psychology

Finally, several contributions to the collective volume show how psychological factors drawn from behavioural economics can explain why misguided green policy measures often still enjoy broad support among the public, opinion leaders, bureaucrats and established parties (Schnellenbach 2026). Three mechanisms stand out:

- Rational irrationality: individuals prefer to support irrational – but morally commendable and virtuous – views when the cost of this irrationality is negligible at the individual level (Caplan 2007).

- Expressive political behaviour: actions and opinions are used to signal identity rather than to influence the actual outcome (Hamlin and Jennings 2011).

- Availability cascades: statements that are repeated as soon as the opportunity arises are perceived as true (Schnellenbach 2024; Kuran and Sunstein 1999).

These mechanisms help explain why voters and politicians support policy measures that may be ineffective or even counterproductive. These factors can be seen in the background to the Swedish government's plan to develop fossil-free sponge iron production (Henrekson 2026) and Stegra's attempt to produce fossil-free steel by substituting hydrogen for natural gas (Johansson and Kriström 2026).

The climate issue has also been used to create a strong 'loss frame', ie when outcomes are described as avoiding losses relative to a reference point, loss aversion can increase willingness to

accept risk and high-cost measures, even when the feared losses are uncertain. (Tversky and Kahneman 1981). By systematically presenting the development of events as so alarming that the result could be a systemic breakdown if no measures are taken, the general public becomes willing to accept large-scale political projects despite great uncertainty regarding their effectiveness. The need to heed the effectiveness and opportunity costs of the proposed measures can thus be downplayed. If a threat can be described as sufficiently serious, it becomes rational to launch even extremely risky projects, as there is still some chance that they will prevent a catastrophe that is said to threaten our very existence.

Alternatives to green deals

We have identified eight factors that together explain why comprehensive top-down initiatives of the type represented by the EU Green Deal often fail to live up to the general public's expectations. Our evaluation shows that the EU Green Deal appears to be expensive, fragmented and ineffective. However, this does not mean that there are no alternative ways to reconcile economic development with environmental considerations.

For environmental and industrial policy to be truly successful, it needs to be designed in light of the institutional and behavioural problems and contradictions identified in the collective volume. Behavioural economic challenges, information problems and public choice dilemmas are not in themselves reasons to abandon environmental and climate policy. Rather, these factors are aspects that need to be taken into account when designing efficient policies. Serious societal challenges must not result in policies that ignore the realistic feasibility of the goals.

The volume's case studies highlight the risks of the EU completely abandoning the principles of technology neutrality. For example, when Brussels earmarks funds for projects where hydrogen is a central component, incentive structures are distorted and the market's decentralised selection process is rendered ineffective. Instead, extensive resources are channelled into technologies that may not be the most promising, at the expense of initiatives that would have been more beneficial economically and environmentally. Political micromanagement to determine which technologies, industries or companies should be considered future winners tends to backfire. Therefore,

the green transition should be guided by market price signals rather than by directional industrial policy. Such a framework should rest on two pillars:

1. A uniform and comprehensive emissions trading system that in principle covers the entire economy.

2. Technology neutrality: *no* sector targets, *no* industry support, *no* industry-specific subsidies.

A fully developed emissions trading system also eliminates the need for overlapping policy instruments, which is a major feature of the current system. In several cases, industries are currently subject to double regulation through both the EU Emissions Trading System (EU ETS) and national energy taxes[7]. New research shows that, despite its shortcomings, the EU ETS has worked relatively well and therefore deserves to be maintained (Colmer et al. 2025). We also advocate that negative emissions should be integrated into the system by counting verified carbon storage against the emissions cap.

With a comprehensive and effective system in place, all targeted technology subsidies and industry-specific grants should be phased out. Nor does policy need to set technology-specific and sector-specific sub-targets. Emissions are equally harmful regardless of where or how they occur. Focusing on and prioritising certain industries, companies or types of technology is a misguided form of governance.

All this may seem easy – and obvious – in theory, but it is of course more difficult in practice. There are also issues

7 If a uniform energy tax is to be used, it should be linked to emissions, not to the type of energy.

that may require special attention, such as industries with environmentally harmful processes that are technically difficult to replace regardless of the price of emission allowances.

More from less?

Historically, environmental improvements have been achieved through continuous improvements over time. The combination of market-based management via price signals, technological development and the management of externalities through appropriate policy measures has in many cases led to incremental improvements.

Grafström (2026) demonstrates how significant environmental improvements can be achieved in parallel with economic growth. Between 1990 and 2021, the EU's CO_2 emissions fell by 28% while the economy grew by more than 50%. During the same period, emissions of pollutants such as lead (–95%), sulphur dioxide (–93%) and arsenic (–90%) fell sharply. It is noteworthy that electricity consumption has remained largely unchanged since 1990, despite continued economic expansion.

Similarly, McAfee (2019) shows that the United States has undergone a process of dematerialisation over the past half-century. McAfee identifies four interrelated drivers for how more prosperity can be created with fewer resources: capitalism, technological innovation, consumer responsibility and regulation.

Capitalism – defined as a system of private, competing, profit-maximising companies – makes resource use costly and therefore encourages continuous efficiency improvements. For

example, material use in aluminium cans and PET bottles has decreased by 85% since their introduction.

The role of consumers is also central. A clear example is how increased awareness of the dangers of chlorofluorocarbons (CFCs) led to protests and strong public opinion against their use, which contributed to the introduction of a global ban (Dugoua 2025). A similar pattern can be seen in the sharp decline in sulphur dioxide emissions (Schmalensee and Stavins 2013).

These examples show that significant environmental improvements often occur gradually and through interaction between innovation, markets, consumer pressure and regulations. In the case of leaded gasoline, industry resistance delayed a ban, but consumer activism and government agencies ultimately pushed through the legislation (Newell and Rogers 2003).

Investments in nuclear power

Mund (2026) argues that the EU and its Member States should consider larger long-term investments in nuclear power. With proper maintenance, reactors built today can produce electricity for 80 to 100 years – a time horizon that is well suited to the long-term nature of the energy system. This is particularly important given the political risks associated with nuclear power. In countries such as Sweden and Germany, reactors have been shut down prematurely for political rather than technical or economic reasons, and both countries are now planning to build new reactors. By all accounts, nuclear power will play a central role in the energy mix of the future in order to achieve climate goals at the global level (IEA 2019; Liu et al. 2023; IAEA 2025).

In order for nuclear power to be expanded in a cost-efficient manner, Europe and the United States must abandon their ambivalent attitude towards nuclear power, which has resulted in new nuclear power plants becoming extremely expensive. While China has managed to halve the real cost of building new nuclear power through standardisation and gradual improvements, the cost has almost doubled in France and increased tenfold in the United States (Liu et al. 2025).

At the same time, the analyses in the volume show that nuclear power projects are not immune to the problems that characterise other megaprojects, such as political influence, rent-seeking, behavioural economic challenges and moral hazard. These challenges underscore the need for a robust institutional framework and scrutiny of the governance of new nuclear power projects. However, it is still true that new nuclear power has become very expensive in the West because of onerous regulatory measures (Liu et al. 2025; GOV UK 2025). Rather than subsidising investments in nuclear power, these regulatory hurdles should be lowered.

Adaptation to global trends

Although an emissions trading system is preferable to targeted industrial policy measures, it should be emphasised that even market-based environmental policies need to be designed in harmony with global conditions.

Since climate change is transboundary, it is of little help if a single country significantly reduces its climate footprint through much stricter environmental requirements. Not even the EU, which consists of 27 countries, can save the world's climate on

its own. In 2023–2024, the EU-27 accounted for a mere 6% of global emissions, even though the Union represents 14% of the world economy. As long as the rest of the world does not follow suit, European emission reductions will therefore have only a limited global impact.

There is much to suggest that the EU will be forced to postpone various bans into the future. There are already examples of how unrealistic ('ambitious') targets have been postponed, five or ten years at a time. When targets become so challenging that they are not met, credibility is undermined. The damage caused is significant, as the industry is affected by uncertainty regarding future rules.

The ban on the sale of diesel and gasoline cars, tentatively set for 2030, prompted vehicle manufacturers to change their strategies, only to see the target date postponed to 2035 a few years later. In late 2025, the ban was further undermined following Germany's complaint that its automotive industry was suffering too much damage.

As recently as in 2022 (and in Sweden until 2023), nuclear power was not included as a component for achieving climate neutrality by 2050. Now, the EU has reversed its position and identified nuclear power as a central part of its climate policy (but not yet regarded as equivalent to renewables). Ill-conceived policies such as the ban of nuclear power in several Member States and the premature ban on combustion engines in the transport sector create significant transaction costs, worsen the investment climate and undermine the competitiveness of European companies.

Conclusions

Six years after the launch of the EU Green Deal, it is becoming increasingly clear that the Union's extensive attempts to transform Europe into a fossil-free and simultaneously growing economy are not working as intended. A fundamental problem is that the design of the Green Deal has been largely inspired by theories of innovation systems and mission-orientated approaches – perspectives that overestimate the state's ability to steer development and ignore the risk of policy failures (Kärnä et al. 2023).

Empirical examples from the early 2000s ethanol car bubble in Sweden, Germany's *Energiewende*, hidden costs in the wind power system, fossil-free steel using hydrogen, Northvolt's bankruptcy, the impact of the planetary diet, and Italy's so-called Superbonus for building renovations related to energy efficiency and seismic resilience improvements (Capone and Stagnaro 2026) show why this type of policy rarely works as intended.

The United Kingdom has followed a similar trajectory, with comparable results in terms of declining industrial competitiveness and soaring electricity prices.

Mission-orientated innovation policies rest on the assumption that complex societal challenges can be decomposed into well-defined objectives and addressed through ex ante design. Yet modern economies are evolutionary and fundamentally unpredictable (Cheang 2026; Cheang and Pennington 2026). As Rittel and Webber (1973) argued more than fifty years ago, challenges such as climate change are 'wicked problems',

ie products of complex systems that preclude definitive formulations and centrally designed solutions.

The radical transformation of the economy that politicians, bureaucrats and opinion leaders have been striving for is not possible to achieve through large, politically decided targeted initiatives – the governments in today's Western democracies simply lack the necessary clout. Therefore, the only viable strategy for achieving ambitious environmental goals is by means of step-by-step reforms based on the evolutionary dynamics of the market economy.

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The Institute of Economic Affairs
2 Lord North Street
London SW1P 3LB
Tel 020 7799 8900
email iea@iea.org.uk

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