# The potential of and limits to 'competitive decarbonisation': the battery sector and Labour's green industrial strategy

Sean McDaniel

Labour's green industrial strategy embraces the global shift towards 'competitive decarbonisation'. Exploring this through the lens of the Lithium-ion battery sector, we can see how without appropriate attention and policy ambition, Labour's agenda risks locking in familiar patterns of ecological damage and wealth and income inequality into a low carbon future.

## 'Competitive decarbonisation' and the Green Prosperity Plan

Across the globe in the recent years, we have witnessed the emergence of what we might call 'competitive decarbonisation'. By this, I am not referring to some imagined 'market-led' transition to net zero, nor should it be taken to suggest that decarbonisation strategies are advancing at anything like the pace that they need to. Rather, it refers to a step-change in global climate politics over the past five years. The threat posed by the climate crisis and the attendant need to decarbonise has, of course, been apparent for decades. The emergence and consolidation of this new politics of 'competitive decarbonisation' is, however, a response to three distinct sets of pressures. First, decarbonisation targets set out

under the 2015 Paris Agreement which, if taken seriously, challenge the viability of many systematically significant industries. Second, the exponential rise of China as a global economic power and its dominance in many emerging sectors of the 'green economy', including Electric Vehicles (EVs) and solar photovoltaics (PV), over the past decade. Finally, Russia's invasion of Ukraine in February 2022, which destabilised fossil fuel energy supply lines that have underpinned models of growth and living standards in many countries for decades.

These pressures are driving forms of competitive decarbonisation as states vie both for a slice of lucrative 'green' markets and seek to insulate themselves from growing economic fragmentation, geo-political turbulence and energy insecurity. They have helped to consolidate a new economic consensus that has industrial decarbonisation and development of 'green' industries at its heart. Influenced by the 'productivist' approach of economists such as Dani Rodrik,[1] the outgoing Biden administration's policy platform was emblematic of this: using industrial strategy and subsidies to reindustrialise and 'onshore' industries of critical significance. This is not a climate or environmental agenda per se, but by dint of the fact that many of the key industries of the future are located in 'green' markets (EVs, renewable energy, batteries), the transition to net zero has become an integral part of the new age of industrial activism. While China has been pursuing an enormous green subsidy programme for years, the USA's 2022 Inflation Reduction Act (IRA) sounded the starting pistol on a global 'green subsidies arms race' with its pledge of $370bn worth of grants, loans and tax credits designed to spur advancements in domestic green technologies. While initially lambasting the IRA as 'unfair', the European Union (EU) responded in kind the following year by grafting an Industrial Plan onto its European Green Deal.

Labour too has embraced a productivist approach, under the guise of 'securonomics'. As Rachel Reeves highlighted in her Mais lecture in the spring of 2024, this is about recognising the weaknesses in the existing free market model of capitalism to deliver 'security' to ordinary working people amidst shifting geo-political dynamics, rapid technological change and, importantly, the climate crisis. Labour's response to this is represented in its flagship 'Green Prosperity Plan' (GPP) which, through the National Wealth Fund (NWF), seeks to invest billions of pounds in a range of green industries over the course of the next five years. Labour's investment plans have of course been scaled back significantly from the initial pledge to spend £28bn annually, which sought to go 'toe to toe' with the US and EU's subsidy programmes. Despite this, by engaging with the new politics of competitive decarbonisation, Labour's green productivist strategy offers the UK opportunities to accelerate its transition towards net zero while rebalancing its economic model. At the same time, however, without appropriate attention and policy ambition, this approach risks locking in familiar patterns of ecological damage and

wealth and income inequality into a low carbon future. A look inside one of the industries at the centre of this new competitive decarbonisation agenda – the Lithium-ion (Li-ion) battery sector – can help us to understand both the possibilities and the pitfalls of this approach.

## Power up: why batteries have become so important

The development of Li-ion batteries tells us a story about our changing global economy. Such batteries were the product of and helped to propel processes of global economic integration through the 1990s and 2000s. Building upon American-led research, Japan's Sony Corporation propelled Li-ion batteries into popular usage with the advent of portable consumer electronic devices (e.g. the Walkman, and later the iPod), while growing Western demand for such goods was underpinned by Chinese and Taiwanese manufacturing. It has been the application of such batteries in automobiles however which has proven to be a game-changer. While American, German and Japanese firms developed and marketed hybrid and later fully electric vehicles, China built up strategic dominance of the global supply chain, from the mining of 'Critical Raw Materials' (CRMs) (e.g. Lithium, Cobalt, Nickel) in Africa and Latin America, to the manufacture of the battery cells that go into such vehicles.[2] The Obama administration did seek correctives to this growing reliance on China, but for much of the 2010s the EU still viewed batteries as a commodity; an input into EV car manufacture, the production of which was best left to Asian economies with comparative advantage in their manufacture.[3]

This position has, however, changed dramatically in recent years. Batteries are now seen as critically important manufactured goods. Alongside their use in EVs, batteries have important application as Battery Energy Storage Systems (BESS) in renewable energy systems, meaning that they are seen by governments across the world as key to achieving energy sustainability. Permitting a single state such as China to dominate the supply chain, from mining and processing CRMs such as lithium, to exporting batteries around the world, is clearly disadvantageous from an economic and energy security perspective. Governments are therefore now taking the sector extremely seriously. The IRA has, for example, pumped nearly $200bn worth of subsidies into the US's domestic battery sector in just a few years, while the EU is seeking to keep pace with its own battery strategy.[4] Such initiatives are designed with multiple aims in mind, decarbonisation being just one. The economic significance of the sector is clear; studies suggest that the battery value chain will generate a total of 10 million jobs worldwide by 2030.[5] While the UK will only ever take a fraction of this market, the battery sector and its impact on

the wider economy represents the potential for tens, if not hundreds of thousands, of new 'green' jobs in Britain. Despite its obvious significance – environmentally, politically and economically – the UK battery sector's development has so far, however, been patchy.

## Batteries, UK industrial policy and Labour's plans

After establishing Europe's first battery manufacturing plant ('gigafactory') in 2012, the UK still only has one operational site, producing the equivalent of less than 3 per cent of the EU's capacity.[6] The UK's battery manufacturing capacity is planned to increase in the next couple of years, when both AESC's second site (12GWh) in Sunderland, linked to Nissan, comes online in 2025, and Agratas's site (40GWh) in Somerset, linked to Jaguar Land Rover, begins manufacturing the following year. However, the UK will still be something of a laggard compared to the EU standard, which is set to host thirty-five gigafactories by 2035. Moreover, unlike the EU the UK has no 'homegrown' manufacturers. Both the AESC (Envision, Japan & China) plant and the Agratas site (Tata Group, India) are owned by large foreign conglomerates. The UK's own battery companies have struggled. Perhaps most famously in early 2023, the UK's first domestic battery start-up firm, Britishvolt, collapsed before it could open a major new 30GWh gigafactory in Northumberland. By the end of that year, administrators were also called in to oversee the sale of Scottish company AMTE Power, which had plans for a smaller site (0.5GHw) in the Highlands.

There are multiple political and economic issues that have militated against the sector's development since the UK's first gigafactory came online. First, is industrial strategy. Britain has historically utilised the state to underpin its imperial market-making operations, particularly in relation to finance.[7] For domestic manufacturing, though, the picture is more mixed. For some, Thatcher's deregulation of finance resulted in a collapse of British industry.[8] For others, manufacturing has long been handicapped by the character of British financial capital, which sought out profits elsewhere in the world rather than establish long-term relationships with domestic firms.[9] Whatever the precise historical origins of this decline, it is clear that for much of the three decades prior to the 2008 crisis, British manufacturing was overlooked as industrial policy became an ugly word.

This did alter somewhat in the post-financial crisis period. The crisis provoked New Labour to promote 'industrial activism' to revitalise the economy, including through greater investment in R&D. Much of this effort was carried through into the Coalition years and bore fruit, including the establishment of research 'catapult

centres'. However, the Conservative-led government from 2015 set about dismantling several industrial policy initiatives, including selling the government's majority stake in the Green Investment Bank.[10] The government's indifference to industrial policy was, nonetheless, reversed once again under Theresa May, following the Brexit vote. May's government published the Industrial Strategy white paper in 2017, which focused on 'sector deals', including one for the automotive industry (though not batteries specifically), and the establishment of an independent Industrial Strategy Council (ISC). Such plans were however, dogged by instability in Westminster. For instance, while the Johnson administration's 'Ten Point Plan for a Green Industrial Revolution' ramped up ambitions to phase out petrol and diesel cars earlier, and to invest in gigafactories and charging infrastructure, the same government scrapped the ISC.

The other aspect to this is the traditional fiscal conservatism of the British state which has been seen as a barrier to green investment, including in the EV sector.[11] After years of the May and Johnson governments embracing a slightly more active role for government, Liz Truss' disastrous mini-budget consolidated a shift back towards small state conservatism under Rishi Sunak and Jeremy Hunt. Even in the context of geo-political and economic fragmentation and a rapidly altering global consensus on the need for state intervention and financing to support industries of critical national significance, the Sunak administration stood firm. Chancellor Hunt said in September 2023 that the UK, 'won't pursue the Inflation Reduction Act subsidy bowl approach to economic policy'.[12] This approach, characteristic of the liberal economic thinking at the heart of the British state, underpinned a reluctance to step in to help support struggling domestic producers. While in Britishvolt's case, there were a host of internal issues affecting the company,[13] its collapse provoked industry commentators to question the determination of the UK government to support the sector.[14]

Another aspect of the weakness of British industrial strategy to date relates, of course, to Brexit. Leaving the EU has had some significant effects. First, implementing the government's 2017 industrial strategy during the Brexit negotiations meant that it was always overshadowed by the capacity-absorbing task of agreeing the future of the UK's relationship with the EU and the constant churn of ministers in Westminster. Second, it reshaped the UK's relations with EU neighbours both in terms of trade and matters of strategic importance. The extension of existing trade rules until 2026, under the Trade and Cooperation Agreement (TCA) between the UK and EU, has kicked the can a little further down the road, but there is no doubt that severing ties with the Single Market and Customs Union has facilitated instability. Third, leaving the EU has seen the UK operate outside the community-wide European Battery Alliance (EBA) initiative, designed to bolster European battery manufacturing, help achieve net zero and secure 'strategic autonomy' in

'critical industrial areas'. It is true that elements of the UK battery infrastructure were established several years ago, such as the Faraday Institution, set up in 2017 with £65 million from the Industrial Strategy Challenge Fund. However, the UK did not establish its own holistic battery strategy until late 2023, with the formation of the UK Battery Strategy Taskforce and publication of the 'UK Battery Strategy' report, which pledged over £2bn in investment for EVs, batteries and their supply chains in the five years up to 2030.[15] As a result, the UK risks being left behind its European neighbours.

While in opposition, Labour set out its own plans for the EV and battery sectors.[16] Through the NWF it has pledged to invest a similar amount across the new parliament as the last government – £1.5bn on top of the £500m already invested, so £2bn in total – which it suggested would help part-finance eight new gigafactories across the country and support 80,000 new jobs. Its strategy also includes provisions for speeding up the planning and approvals process to get factories built; to increase the number of skilled workers needed for the industry; to invest more heavily in R&D in the sector; boost consumer confidence through product standardisation and certification; and accelerate construction of the national charging infrastructure needed to support EV adoption.

Labour's plans for the sector should in this sense, be viewed as useful continuity with past industrial strategies and a ratcheting up of ambition. However, its approach to the battery sector is indicative of its broader engagement with the global dynamics of competitive decarbonisation. On the one hand, it risks not seizing the opportunity to exploit these shifts fully to the benefit of the UK economy. On the other hand, its approach risks locking in familiar patterns of ecological damage and wealth and income inequality into a low carbon future. How Labour manages these risks will come to define what sort of government it is.

## The potential of and limits to Labour's competitive decarbonization strategy

Labour has engaged with the emerging dynamics of competitive decarbonisation and embraced the productivist turn in economic thinking, which provided a useful intellectual framework for its alternative approach to economic governance in opposition. Yet, after scrapping its ambitious £28bn annual investment plan, its plans have been derided as 'Bidenomics without the money'. This captures something of a dilemma for Labour. The UK was never realistically going to compete with a mercantilist USA, nor indeed the economic firepower underpin-

ning an EU-led battery strategy, in investing hundreds of billions in domestic firms or to attract foreign investment. However, it remains ambiguous as to how the government will be able to deliver on its plans to significantly 'green' the UK economy while pursuing a constrained programme of capital investment. Government stability and ambition will get you so far, but more investment is going to be necessary to deliver a successful industrial strategy capable of nurturing critical industries which are capital and technology intensive, such as the battery sector, where past administrations have failed.

Recognising the limitations of what Labour can do is important too. The UK is not going to turn into an export powerhouse like Germany anytime soon. But a model more suitable would perhaps be one akin to those of Scandinavian countries, which remain balanced and open economies with large high-end service industries that have also developed valuable niches in important manufacturing export markets, such as Denmark's role in the wind turbine industry. Labour must adopt a more strategic approach to the emerging dynamics of competitive decarbonisation globally by focusing on how it can successfully *shape* the path ahead of the UK, not looking back to what it could or should have done a decade ago. This means developing clear, focused industrial plans for specific sectors where the UK already appears to hold a comparative advantage or can establish a niche.[17] This will be important to not only rebalancing the sectoral composition of the UK economy, but also its geographic inequalities, given that manufacturing tends be located outside of London and the south east. Delivering this will, however, require ambitious and long-term funding institutionalised in such a way that it can support these sector's development over the next decade, regardless of whether Labour remains in power or not. Currently, however, it is not clear if such requirements are compatible with the government's fiscal rules.

We might question, therefore, whether Labour's plans can even deliver the kind of productivist political economy that it hopes it might. But if we set this question aside for now, the battery sector also provides us with insight into some of the social and ecological limitations of competitive decarbonisation drives that Labour must consider.

While Labour has been effusive of its *pro-worker, pro-business* stance, to ensure that the UK's transition to net zero is 'just' and, in this sense, social democratic, it must be clear-eyed about the potential 'winners' and 'losers' of the transition. Much of the focus here tends to fall on ensuring a just transition for workers in the traditional automotive sector, and for good reason. As a manufacturing industry at the heart of the green transition, jobs in the battery and EV sector are amongst some of the most tangible 'green' jobs. It is critical, therefore, that the government invests ambitiously in reskilling workers in the automotive sector, especially in

communities that have previously experienced the ill effects of deindustrialisation. A more significant – if less visible – issue, though, lies in the potential patterns of ownership and wealth extraction that will emerge in the sector. Using public funds to catalyse private investment and partnering with business are central to Labour's programme, and likely critical to delivering technological change at the pace we need to. However, it is also critical – as scholars like Professor Daniela Gabor have done – to interrogate the state-capital relationships at the centre of the global drive towards decarbonisation.[18] Labour must learn from its experience of Private Finance Initiative (PFI) deals, of the risks of poorly orchestrated public-private partnerships that enrich a small number of investors but burden the state with risk and lock stakeholders into long, expensive contracts and infrastructure or technology that is quickly outdated. An alternative approach should involve facilitating a broader ecosystem of businesses and enterprises within the UK's emerging battery sector by nurturing locally-owned initiatives that can feed into the supply chain – such as having a stake in the circular economy of recycling batteries.

On the other hand, in ecological terms, the battery sector highlights some of the difficult trade-offs that come with a productivist economic strategy focused on building new green industries to secure growth and jobs. A shift towards battery powered cars will massively increase our reliance upon CRMs such as Lithium, Nickel and Cobalt. The mines where such materials come from are plagued by issues around poor pay, unsafe working conditions, local ecological destruction, and even human rights abuses and child labour. The expected rise in demand for these materials therefore fuels concern over colonial 'green extractivism' in countries with large reserves, including Chile, Argentina, the Democratic Republic of Congo and Indonesia.[19] At the same time, while it is clear that EVs are comparatively cleaner than petrol and diesel cars,[20] potential remains for 'rebound effects' to take place: despite being more emissions efficient, growing consumption fuelled by an increasing global population could still see total emissions rise. Indeed, though cars are now more efficient, UK transport emissions have fallen just 2 per cent since 1990, and transport is now the largest sector for greenhouse gas emissions (27 per cent), of which road transport accounts for over 90 per cent.[21]

Labour must view its industrial strategy through the lens of its environmental and ecological impact. Developing a viable domestic battery manufacturing sector is going to be important, both to service the shift away from petrol and diesel cars and to support the decarbonisation of the grid as power storage becomes more important. However, the switch to EVs should not trade one set of environmental injustices for another, if producing batteries results in ramping up environmentally damaging and socially unjust mining and chemical processing practices.[22] Labour must deliver on its plans to establish a Supply Chains Taskforce, and such a body must be given power to enforce strict rules and standards for both domestic

manufacture and imports to ensure the highest possible standards for battery material mining, processing and production globally. Furthermore, given that it will be incredibly difficult for the UK to reach its net zero targets without reducing our overall energy consumption,[23] the government must recognise the need to reduce reliance on private vehicles in our society. Demand-side policies to reduce energy demand through, for example, large-scale investment in public transport systems and cycle lane infrastructure must be prioritised.

## Conclusion

Strategic action by state actors to decarbonise their economies is being driven by inter-related economic and energy security concerns. Global action to curb climate change has in many senses been subsumed by these other priorities. There is certainly not the level of focus on the climate and environment we should be seeing. However, the energy unleashed by these pressures has also served to accelerate green industrial policies, putting them the forefront of many government programmes, including that of the new Labour administration. This opens up the possibility for state action to facilitate the transition to net zero while rebalancing the UK economy more successfully than British governments have done hitherto. At the same time, Labour's productivist approach runs the risk of focusing on growth, competitiveness and security at the expense of the climate and environment, and the need for the net zero transition to be socially and economically just. If this risk materialises in the coming years, the UK will find it harder to reach its net zero targets, while existing patterns of wealth, income and regional inequalities will simply be baked into its future low carbon economy.

**Sean McDaniel** is a Lecturer in British Politics at the University of Leeds

## Notes

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