THIRD WAY

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Making the UK a Clean Energy Superpower: Labour's Energy and Climate Agenda and Lessons from the US

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Takeaways

- A well-designed clean energy industrial strategy can make a significant contribution to delivering Labour's primary mission to "get the UK's economic growth to the highest sustained level in the G7 by the end of Labour's first term".

- The Labour Party's mission to make Britain a "clean energy superpower" is ambitious but achievable, and fully reflects the huge natural opportunities that the UK can unlock with coordinated and committed action from government, industry, and private investment.

- The new Labour government will, however, need to act quickly and decisively to attract and direct private capital. To do this, it must determine those parts of the clean energy value chain that have the best chance to be successful in a highly competitive and crowded global market.

- The UK's greatest chance of success will be to maximize this impressive offshore wind potential while balancing its energy portfolio with onshore wind, solar, storage, nuclear, and hydrogen to increase affordability and reliability.

- Chancellor Rachel Reeves has rightly described the UK's restrictive planning system as "the single greatest obstacle to our economic success" and that a "once-in-a-generation" overhaul is fundamental to UK decarbonization and growth.

- The Biden administration's clean energy industrial strategy provides valuable lessons for the new Labour Government, particularly on how encouraging investments in place-based projects can provide benefits to specific, underserved communities.

In its 2024 General Election manifesto, the United Kingdom's Labour Party makes clear its commitment to reducing greenhouse gas emissions and its intention to deploy more clean energy. These pledges don't exist in a vacuum: members of the Labour Party have previously expressed support and admiration for the Biden administration's landmark clean energy 'industrial strategy' and recent efforts to boost domestic clean energy manufacturing and deployment throughout the United States.

In this paper, we examine the Labour Party's proposed approach—as described in its General Election manifesto and the amended mission statement from February 2024 [1] —and outline the kinds of clean energy investments and policy changes needed to make these goals a reality. We also offer key insights the UK can draw from the past four years of US clean energy policy and offer thoughts on the implications of current US policy for US-UK trade.

This work is heavily informed by research on the UK and Europe's energy systems by Third Way's affiliate, Carbon-Free Europe (CFE). In partnership with the Tony Blair Institute, CFE analyzed the UK government's net-zero plans in January 2024 and found that the government had underestimated electricity demand by 2050 and set unrealistic and inadequate targets for clean energy deployment. Below, we use CFE's analysis to offer an alternative path forward for the new UK government to meet its climate goals, while achieving its other economic and energy goals.

Making the UK a Clean Energy Superpower

Used to make the case for Labour to UK voters, the Labour party's 2024 General Election manifesto argued that sustained, substantive clean energy investments could give the United Kingdom "a driving sense of purpose" and not only reduce greenhouse gas emissions, but also generate economic growth, increase energy independence, and help lower the cost of living.

The party has publicly committed to deliver a cheaper, zero-carbon electricity system by 2030, planning to quadrouple offshore wind power, triple solar deployment, and more than double onshore wind capacity.

Considering the rate of progress made under the previous Conservative Government's 2035 commitment and the country's current state of readiness for infrastructure and technology, Labour's overall plans will make a positive difference to how quickly the UK can move towards its clean energy goal. The 2030 clean energy target is a high-risk commitment that will prove a considerable challenge to meet, especially considering current estimates for the UK's future energy needs. Our modelling shows electricity demand in the UK increasing by up to 50% by 2030.

The government, however, is right to set an ambitious target. It reinforces the UK's commitment to clean energy leadership. Analysis from Carbon-Free Europe shows that a strong UK clean energy market *is* achievable, through strategic investments in three key groups: offshore wind, nuclear energy, and clean hydrogen.

Offshore Wind

The UK possesses vast offshore wind potential, capable of generating over 1000 GW of renewable power if fully harnessed—second only to Norway in Europe. The UK can and should prioritize offshore wind deployment to meet its climate goals, but those efforts must be coupled with

investments in other technologies that increase affordability and reliability, including onshore wind, solar, storage, nuclear, and hydrogen.

The deployment of additional onshore wind and solar power generation will be important in the short-term. But as offshore wind expands, the number of new optimal locations, and therefore their commercial viability, dwindle, so construction of offshore windfarms and nuclear reactors will become even more important—construction which will require serious investment and planning over the next decade.

As our modeling shows, the UK is well positioned to leverage its nuclear and offshore wind industry to provide energy to mainland Europe. We estimate that the UK could net export 55 TWh of electricity by 2050, establishing itself as a key player in accomplishing all of Europe's climate and energy security goals and creating new opportunities for economic growth at home.

Nuclear

As transportation shifts from petrol to electricity, AI data centres expand, and investment in strategic industries increase, the UK will need to expand its capacity to produce electricity that is always available (for example, during extended periods when there is little or no wind) and zero-carbon. This will balance the increased influx of intermittent renewable energy, backed by short- and long-term duration storage.

Nuclear power can meet the UK's growing electricity needs. The country has long been a global leader in civilian nuclear power. It was the first country to operate a nuclear power plant for commercial electricity production, at Calder Hall in 1956. Today, nuclear power produces approximately one-fifth of the UK's clean energy, and the country has one of the most highly skilled nuclear workforces and fuel production capabilities in the world. By 2030, however, all but one of the nation's operating nuclear power plants will retire. Our modelling shows the need for as much as 61 GW of nuclear by 2050for the most cost-effective pathway to net-zero and to support a robust hydrogen sector.

Hydrogen

During times of high renewable output, electricity can also be diverted from the grid to use for hydrogen production, another area where the UK has positioned itself well. This is not just a form of storage—clean hydrogen could then be used to replace refined fuels in parts of the economy that cannot be electrified, such as parts of the transport and heavy industry sectors.

Thanks to its incredible offshore wind resources and potential to expand nuclear energy, the UK could become a clean hydrogen production hub, both for domestic use and for export to Europe. The

current Hydrogen Backbone Link is already planned to supply up to 10% of Europe's hydrogen demand by the mid-2030s.

Reaping Promised Economic Benefits

With appropriate investments in these three strategically significant technologies, a new Labour administration can navigate a path to a sustainable net-zero energy future, while expanding its role in the global clean energy economy.

The Labour party has promised that the transition to clean energy will reap other benefits for UK families, including reduced exposure to expensive and volatile fossil fuel prices and significant economic growth. The party's manifesto promises to lower energy bills by hundreds of pounds, "not just in the short term, but for good." Labour has also included economic growth in its key mission, pledging [2] "to get the UK's economic growth to the highest sustained level in the G7 by the end of Labour's first term."

These benefits aren't guaranteed in the clean energy transition. They are born of smart, strategic policy-making.

Below, our thoughts and recommendations for achieving promised cost-cuts and increased economic opportunities through four key strategies: drawing on the UK's existing competitive advantages, increasing private investment in the energy transition, reforming the country's planning system, and accelerating infrastructure buildout.

Draw on the UK's Competitive Advantage

A recent report by the IPPR—"Manufacturing Matters: The Cornerstone of a Competitive Green Economy" [3] —describes the net zero transition as "a perfect opportunity to revitalize UK manufacturing and report reflects areas of comparative advantage in which the UK has the potential to use its existing infrastructure to plug gaps in global manufacturing capacity, particularly in wind power.

The report finds that the UK already has comparative advantage in one in three products essential for net-zero transition, and that regions in the North and Midlands of England, Wales and Scotland all have industrial capabilities that are well placed to branch into green manufacturing.

We support the IPPR's view that a future Labour government should adopt a 'pathfinding' economic strategy to choose which green industries to focus on. This should be based on the size of opportunity, the UK's existing industrial capabilities and strategic supply chain considerations. Using a framework that considers the potential size of the domestic and global markets, existing strengths in and potential of green manufacturing capabilities, and current supply chain resilience,

the IPPR believe that wind manufacturing should be an immediate green manufacturing priority for the Government.

“Crowd In” Private Investment

In her Mais lecture in March when in opposition, Labour’s Chancellor of the Exchequer, Rachel Reeves, set out the key planks of Labour’s economic policy and identified the key policy changes focused on unlocking private investment to support growth [4] .

She reflected the party’s plans to use government to “crowd-in” private investment in infrastructure and in those sectors of the economy where the UK has a potential comparative advantage, including key areas of clean energy production. We echo Reeves’s assessment—crowding in private investment has been essential to growing US clean energy manufacturing and deployment, with every dollar of federal investment prompting 5-6 times the amount of private sector investment.

The proposed £7.3 billion National Wealth Fund and £8.3 billion GB Energy aim to accelerate the transition to clean energy and attract significant private investment, leveraging each taxpayer pound (£15.6 billion) to bring in £3 of private funds (£46.8 billion), matching the expected green investment needs of £57 billion.

GB Energy will focus on low-carbon energy projects in wind, solar, hydrogen, and carbon capture, funded by a windfall tax on oil and gas profits. Meanwhile, the National Wealth Fund will invest in infrastructure projects such as ports, gigafactories, and clean steel, despite concerns about overlapping with existing state investment bodies and not generating direct financial returns for taxpayers.

Reform the Planning System

Reeves rightly described the UK’s restrictive planning system as “the single greatest obstacle to our economic success.” She also observed that a “once-in-a-generation” overhaul was fundamental to UK decarbonization and growth.

It is our view that the most powerful transformation a Labour Government can make will be to reform the planning system to allow clean energy generation and transmission assets to flourish. Yet a new system will need to deliver the required sequence of plans rapidly while retaining the support of local communities.

This will require political leadership and risk, not least because many of the renewable assets, physical grid infrastructure, and transmission and networking capacity that UK needs will have to be sited in sensitive parts of the British countryside. Not all interests and parties will be supportive.

This will be exacerbated by what will be an unprecedented mismatch of energy sources and energy demand of a new clean power system. Eastern England is likely to produce ten times the renewable power it will consume, while London and the South will consume six times what it can produce. Scotland will provide renewable power that far exceeds its own demand.

Carrying this power over long distances will be the driver of new energy assets across the country and those assets will have undeniable environmental impacts.

The new Labour Government should follow the lead of Scotland and many other countries in Europe by adopting a comprehensive community payment system to encourage local consent.

Payments for siting renewables and grid infrastructure—the highest impact assets—should be mandatory, annual and paid on a proximity basis. Such a shift would be in line with the recommendations from the UK's independent Electricity Networks Commissioner, Nick Winser, in his report on accelerating the deployment of electricity transmission infrastructure published in 2023. [5]

Accelerate Infrastructure Rollout

The scale of the infrastructure challenge for the UK is huge. The UK needs to build almost seven times as much transmission infrastructure in the next seven years as was built in the last 32 years to meet the previous government's 2035 clean energy target. Yet current constructors of grid generation capacity are being offered connection timelines into the 2030s—too slow to meet the commitments.

The Winser report recommended accelerating the rollout of electricity transmission infrastructure. The UK grid needs to be ready for 24 GW of new nuclear and 50 GW of wind, ultimately by 2050. 230 GW of new generation needs to be connected, 80 GW of which is currently connected. Currently England is the only UK home nation without a strategic spatial plan. No country in the EU with high renewables penetration has been able to construct the system without strategic plans.

It will be essential for the new UK government to draw up a comprehensive plan early in office to identify key infrastructure projects—from nuclear to wind, from new technologies to grid overhaul—alongside an investment framework and an analysis of supply chain and skills requirements.

The UK must focus on building the necessary infrastructure to meet its 2030 goals. These include achieving 155 GW of electric capacity, with two-thirds from renewables such as 23 GW of offshore wind, 36 GW of onshore wind, 51 GW of solar power, and 8.5 GW of electricity storage.

In addition, developing domestic supply chains and skills will be crucial to deploy and operate these technologies, as well as establishing CO2 and hydrogen pipelines to Ireland and Belgium, and

reducing reliance on gas and refined fuels by 10 Mtoe each through increased renewable electricity demand and efficiency improvements.

Lessons from the United States

With the passage of three landmark pieces of legislation—The Bipartisan Infrastructure Law of 2021 (BIL) [6] , The CHIPS and Science Act of 2022 (CHIPS) [7] , and the Inflation Reduction Act of 2022 (IRA) [8] —the US has used 'industrial strategy' to catalyze clean energy deployment and combat climate change.

The US approach stands alone in its precision, emphasizing smart investment rather than sheer volume. BIL, CHIPS, and IRA have been strategically designed to mobilize focused and effective private investment in key industries, spurring over half a trillion dollars of private investment across dozens of industries, from solar manufacturing to hydrogen production.

In doing so, the US is demonstrating that, beyond combatting climate change, well-designed clean energy industrial strategy can enhance economic and energy security, revitalize domestic manufacturing sectors and workforces, and build global competitiveness in the technologies that will define the 21st century.

Third Way has published a guide to demystify current US policies, and you can find the complete detailed document available here. From tax credits to technical assistance, dozens of funding structures and policy mechanisms have been tapped to strategically target the highest impact and hardest to decarbonize areas of the US economy.

The administration's clean energy industrial program provides four primary lessons for UK policymakers: support research and development, commit to cross-government coordination, prioritize of community benefits, and spur public-private collaboration.

Support Research and Development

From R&D to applied innovation to early adoption to system integration and market expansion, the three pieces of legislation underpinning US clean energy industrial strategy support successive phases of innovation.

CHIPS has energy provisions that focus on creating new R&D programs but, critically, does not fund them.

BIL focuses largely on mid-stage technologies that are out of their initial R&D phase but not ready for widespread deployment. Funding in the form of grants and loans is targeted at:

- Accelerating the commercialization of innovations

- Providing innovation investments through grant funding for clean energy demonstration projects

- Supporting infrastructure buildout and strong supply chains

IRA uses a mix of specialized tax incentives to provide specialized funding to support the widespread deployment of clean energy technologies at market scale, including a technology-neutral production tax credit (usually awarded for 10 years to provide investor certainty) and tech-neutral investment tax credit for clean energy generation. They focus on:

- Supporting technology adoption and system integration leading to market expansion

- Creating a demand signal for clean energy

The aim of this legislation is to provide complementary incentives that encourage innovation along the pathway and spur public adoption. So, for example, BIL funds hundreds of programs across the clean energy spectrum such as Regional Clean Hydrogen Hubs (H2Hubs). IRA has introduced new forms of tax credits to reduce the costs of clean energy production and support new investment such as the 45V Clean Hydrogen Production Tax Credit.

Commit to Government Coordination and Cooperation

The combined investment from the Inflation Reduction Act and Bipartisan Infrastructure Law has dwarfed anything previously managed by the US Department of Energy and other agencies. It required the creation of new sub-cabinet level agencies, such as the Office of Clean Energy Deployment, led and staffed by political appointees and civil servants skilled at evaluating and providing funding to commercial is able clean energy projects.

Simultaneously, existing programs like the Department of Energy's Loan Program Office needed to scale its staffing and take on new requirements, such as evaluating Community Benefit Plans (see below). All of this, by necessity, required significant planning, inter- and intra-agency coordination, and time.

The more these actions can be pre-planned, including determining how centralized deployment of government investment will be and how much inter-cabinet department coordination is likely required, will ensure funding is released and projects developed more quickly. This is particularly important for projects, like hydrogen hubs or nuclear plants, that will take more than the first term in office to be built. It is important that they are done *both* efficiently, with clear community benefits, and physical evidence (such as commencement of construction) that projects will be delivered on time and on budget.

Focus on Community Benefits

The US experience has demonstrated the value of directing clean energy infrastructure investment to projects that benefit specific communities. The Department of Energy, for example, requires all developers to submit Community Benefits Plans (CBPs) [9] as part of their applications to receive funding or loans as a result of the BIL and IRA.

Community agreements are based on a set of four core policy priorities:

- Engaging communities and labour;
- Investing in America's workers through quality jobs;
- Advancing diversity, equity, inclusion, and accessibility through recruitment and training; and
- Implementing **Justice40**, which directs 40% of the overall benefits of certain Federal investments to flow to disadvantaged communities.

Recent US Treasury data demonstrates that clean energy investments are benefiting communities with economies historically reliant on fossil fuels and to those with lower-income and less-educated populations [10] . It is also important to note, however, that balancing the Community Benefits requirements and the climate, energy, and prosperity needs of communities and the nation can be tricky. Effective integration with planning and regulatory reform and the timeline for proposed infrastructure delivery will be critical.

Encourage Public-Private Collaboration

Federal loans, grants and particularly tax credits are successfully leveraging massive private investment into clean energy projects. In 2023, it is estimated that the federal government invested $33.7 billion in the manufacture and deployment of clean energy and transportation technologies [11] . Early research suggests that private investment in clean energy technologies was somewhere between five to six times larger than that.

The total amount of investment (federal plus private) on clean energy (manufacturing, energy and industry, and retail) was $239 billion, up 38% as compared to 2022.

Investment across 20 clean energy technologies now represents 5% of all investment in the US economy, while more than 160 companies have invested in at least one clean energy manufacturing project since the IRA was signed into law.

Independent research on jobs and workforce development points to the significant growth in jobs and wages for non-college workers in industries like electric vehicle battery production. Since the

passage of the IRA in August 2022, more than 300,000 new clean energy jobs have been announced for electricians, mechanics, construction workers, technicians, support staff and others.

In structuring US clean energy strategy to encourage private sector activity, the Biden-Harris administration has managed to grow the US economy and create expanded economic opportunity in the process.

Implications for US-UK Trade

Labour's clean energy investment agenda and the actions taken by the US in the first term of the Biden Administration set up an important opportunity for the countries to increase coordination in 2025. Even as the UK begins to implement its planning reforms, scale Great British Energy, and organize government to invest and provide market signals for private capital to deliver clean energy infrastructure, it should also look across the Atlantic.

Enhancing transatlantic collaboration on energy supply chains between the US, EU and UK should play a key strategic role in helping to leverage up deployment and driving clean energy costs down. Such collaboration offers huge strategic rewards for each, not least in terms economic prosperity and job creation.

In the event of a second Biden term in 2025, a new UK government should move quickly to identify partnerships through sector or technology-specific trade deals, especially if there is a second Biden term. This could also include coordination the build-out of specific parts of technology or sector value chains, such as nuclear fuel production or scaling of hydrogen, and establishment of common measurements and verification for carbon-intensity of processes and good, such as steel and aluminum.

A Trump administration in 2025 poses significant risks to a UK clean energy industrial strategy reliant on overseas investment and global trade, and to US/UK collaboration in clean energy innovation and deployment. The prospect of a devalued dollar, increased tariffs on imports and other measures to restrict trade would have significant impact on the US economy, as would plans to remove from the labour market millions of unauthorized migrants currently working in the US.

A recent analysis by Wood Mackenzie's Energy Transition Research concluded that a Trump victory would jeopardize a projected $1 trillion in low-carbon energy investments in the US [12] . As troubling, carbon emissions would be 1 billion tonnes more by 2050 than under current policies. David Brown, director of Wood Mackenzie's Energy Transition Research, said:

"This election cycle will really influence the pace of energy investment, both in the next five years and through 2050. Investments in low carbon supply need to be made in the near term to realize

longer-dated decarbonization targets. US carbon emissions could grow, putting net zero out of reach in our delayed transition scenario."

Wood Mackenzie projects about $7.7 trillion in investment for the U.S. energy sector over 2023-2050 under current policies, which include key incentives enshrined in the bipartisan infrastructure bill and the climate-focused Inflation Reduction Act. It would be $1 trillion less if Republicans reverse key policies bolstering low-carbon energy and infrastructure improvements.

A further US withdrawal from its international commitments could result in further breakdown of trade and encourage authoritarian regimes using energy even more aggressively to pursue their strategic goals against democracies in Europe and Asia.

Conclusion

A UK clean energy industrial strategy has enormous potential both to accelerate Britain's green transition and to boost economic growth. Labour's mission and plans reflect its serious commitment to make this a centerpiece of a program for government.

Yet designing and implementing these plans will require considerable leadership, effort and expertise. Perhaps most important is identifying where, how and when government can "crowd-in" investment in major infrastructure projects, clean energy innovation and deployment, and reliable and efficient supply chains.

The experience of the Biden administration's strategy over the last three-and-a-half years can provide valuable insights for the new Labour Government in this task. It's focus on public-private collaboration to boost growth and jobs, the use of tax incentives to drive private investment and the securing of social and economic benefits for underserved communities has proved a significant policy success.

The forthcoming US Presidential election in the US, however, carries significant risk for the UK's plans. A Biden victory could open the door to significant new collaboration on a transition to clean energy while a Trump victory poses considerable threats.

TOPICS

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ENDNOTES

1. Make Britain a Clean Energy Superpower, Labour Party website, February 2024 https://labour.org.uk/wp-content/uploads/2024/03/Make-Britain-a-Clean-Energy-Superpower.pdf

2. Labour Party website, May 2024 https://labour.org.uk/missions/economic-growth/

3. Manufacturing Matters: The cornerstone of a competitive green economy, IPPR, May 2024 https://www.ippr.org/articles/manufacturing-matters

4. Mais Lecture 2024, Labour Party website, March 2024 https://labour.org.uk/updates/press-releases/rachel-reeves-mais-lecture/

5. Accelerating electricity transmission network deployment, UK Government website, August 2023 https://www.gov.uk/government/publications/accelerating-electricity-transmission-network-deployment-electricity-network-commissioners-recommendations

6. A Guidebook to the Bipartisan Infrastructure Law, White House website, March 2024 https://www.whitehouse.gov/build/guidebook/#:~:text=The%20Bipartisan%20Infrastructure%20Law%20is,and%20the%20safety%20of%20our

7. CHIPS and Science Fact Sheet, White House website, August 2022 https://www.whitehouse.gov/briefing-room/statements-releases/2022/08/09/fact-sheet-chips-and-science-act-will-lower-costs-create-jobs-strengthen-supply-chains-and-counter-china/

8. Inflation Reduction Act Guidebook, White House website, August 2022 https://www.whitehouse.gov/cleanenergy/inflation-reduction-act-guidebook/

9. About Community Benefit Plans, US Department of Energy website https://www.energy.gov/infrastructure/about-community-benefits-plans

10. Inflation Reduction Act Driving Clean Energy Investment to Underserved Communities, Communities at the Forefront of Fossil Fuel Production, US Department of the Treasury website, November 2023 https://home.treasury.gov/news/press-releases/jy1931

11. Clean Investment Monitor: Q4 2023 Update, February 2024 https://assets-global.website-files.com/64e31ae6c5fd44b10ff405a7/65dfcaebd76fc56445fd7375_Clean%20Investment%20Monitor%20-%20Q4%202023%20Update.pdf

12. Hitting the Brakes: How the energy transition could decelerate in the US, Wood Mackenzie's Energy Transition Research, May 2024 https://www.woodmac.com/horizons/delayed-us-energy-transition-scenario/?utm_campaign=horizons-may-2024&utm_medium=email&utm_source=pr-email&utm_content=outlook