WINNING THE GLOBAL GREEN RACE

LESSONS FOR THE UK FROM THE US' INFLATION REDUCTION ACT

Luke Murphy

March 2023

Institute for Public Policy Research

ABOUT THE AUTHORS

Luke Murphy is associate director for energy and climate and is head of the Fair Transition Unit at IPPR

ACKNOWLEDGEMENTS

The author would like to thank IPPR colleagues George Dibb, Sam Alvis, Carys Roberts, Harry Quilter-Pinner, and Carsten Jung for their contributions. IPPR would also like to thank US colleagues Ben Beachy (BlueGreen Alliance), Todd Tucker (Roosevelt Institute), and colleagues at the Center for American Progress (CAP) for their thoughts and insights on this topic.

The author would also like to thank other IPPR colleagues including Richard Maclean, Abi Hynes, David Wastell, and Liam Evans for their contributions.

Download

This document is available to download as a free PDF and in other formats at:

http://www.ippr.org/research/publications/winning-the-global-green-race

Citation

If you are using this document in your own writing, our preferred citation is:

Murphy L (2023) *Winning the global green race: Lessons for the UK from the US' Inflation Reduction Act*, IPPR. http://www.ippr.org/research/publications/winning-the-global-green-race

SUMMARY

THE UK RISKS FALLING OUT OF THE GLOBAL GREEN RACE

The UK is in urgent need of renewal. The country faces a series of challenges: stagnation and inequality, risks to national, economic, and energy security, and the climate and nature crises. Together, they threaten to undermine the UK's path to a future that is prosperous, fair, and green.

In response to similar threats faced in the United States, the Biden administration has passed the Inflation Reduction Act (IRA), along with several other pieces of legislation, designed to transform the US economy, revitalise manufacturing, grow the clean energy sector, and support and create well-paid, high-quality jobs. The IRA is the largest climate bill in US history with estimates of spending for this act alone varying from $369 billion to almost a trillion dollars.

While the EU is contesting various measures on fair trade grounds, it's also preparing to respond in kind via its proposed Green Deal Industrial Plan (GDIP). By contrast, the UK government has criticised the measures, calling them 'dangerous' while arguing simultaneously that the UK isn't able to compete with such subsidies, and that it has no need to replicate them anyway because the UK is already 'ahead of the game' (Islam 2023).

However, the UK risks being squeezed by its two largest trading partners as a new international consensus forms around the use of muscular green industrial strategy to reap the economic benefits of the race to net zero. A single set of figures released last month tell the story. Over the past seven years the low carbon and renewable economy in the UK has increased its turnover by £11 billion and added over 11,500 jobs (ONS 2023). Meanwhile in the seven months since the IRA passed, clean energy companies have announced over 100,000 new jobs across 31 US states with investments totalling $89.5 billion (Climate Power 2022).

It's not possible for the UK to just replicate the measures in the IRA; they are tailored to the political and policy context of the US. But there are lessons to learn if the UK is to respond effectively and reap the benefits of the green transition and accelerate its pathway to net zero.

Failure to do so will see the UK not just falling behind in the global green race, but falling out of it altogether with disastrous consequences for its economy and the environmental agenda.

EIGHT KEY LESSONS FOR THE UK

1. **The UK faces similar challenges to the US that the IRA is seeking to address, but the UK is more vulnerable and its response is, by comparison, completely inadequate.**
2. **There is a growing international consensus on green investment and industrial policy, but the UK is now an outlier.**
3. **Place-based industrial policy can deliver for climate, prosperity, and levelling up.**
4. **The UK can draw on a wider toolkit of green industrial policy but must be more focused in its use.**
5. **The UK must learn from the unprecedented certainty and policy stability that the IRA provides.**
6. **Climate action can be a jobs engine, but the UK must focus on quality, not just quantity.**
7. **There is a need for corporate safeguards to socialise risks and rewards.**
8. **The UK should play a key role in greening the global trade regime.**

BACKGROUND TO THE INFLATION REDUCTION ACT

ENTER THE US INFLATION REDUCTION ACT

In late 2022, the United States passed the Inflation Reduction Act (IRA), the largest climate bill in US history with official estimates of $394 billion in spending over the next decade (CBO 2023).

The IRA is part of a suite of measures introduced by the Biden administration to respond to three 'mega trends' afflicting the US economy and society; secular stagnation, the threat of climate change and environmental breakdown, and economic competition from, and security concerns regarding, China (Watson Institute 2022).[1]

In passing the IRA and other acts including the Chips and Science Act (CSA), Infrastructure Investment and Jobs Act (IIJA), and the America Recovery Act (ARA), President Biden's administration has accelerated domestic climate action in the US and ramped up industrial policy, with significant public spending through production and consumption subsidies designed to stimulate the green economy.

The IRA is a tipping point in climate action in the US with a significant increase in emissions reduction as a result. Models estimate that the IRA could cut US domestic greenhouse gas emissions by around 40 per cent by 2030 from 2005 levels, as opposed to a 24-35 per cent reduction without it. However, there is still some way to go for the US to get on track to meet its commitments under the Paris Agreement. The US nationally determined contribution (NDC) sets a target of reducing US net GHG emissions by 50 to 52 per cent below 2005 levels in 2030.

The act has the potential to attract and steer private investment and industry away from the UK, Europe, and elsewhere, and towards North America. The economic ramifications for the UK will only become more acute if, as expected, the EU responds in kind with its proposed Green Deal Industrial Plan (GDIP).

THE POLITICS: THE ONLY CLIMATE ACT POSSIBLE?

The US has long been regarded as a laggard in terms of its domestic ambitions and policy commitments in relation to climate. This has been in large part due to the complex domestic politics at play between successive US presidents, congress, and the changing nature of the Supreme Court. Previous attempts to pass carbon pricing measures – most notably the attempt to pass a cap-and-trade bill in 2009 under President Obama – have failed. Since then, most climate policy has been undertaken through presidential decree.

The passage of the IRA should therefore be seen within this context; that is, the use of policy 'sticks', such as carbon pricing measures, to drive climate action were not deliverable politically. Moreover, facing only a narrow democratic majority in the senate, the Biden administration had to ensure the IRA met the other policy objectives of several key senators and representatives including supporting workers, domestic manufacturing, and responding to the dominance of China within certain supply chains.

It's likely that the form the IRA took was the only kind of bill that could have passed. Its emphasis on public investment through subsidies, local content requirements, and support for workers' rights should be seen in this light.

1 Although, upon taking office, President Biden argued the four crises his presidency would confront were the coronavirus pandemic, economic collapse, racial justice, and climate change (ibid), many of the administration's announcements have been heavily themed with references to 'made in America' and responding to Chinese economic competition (ibid).

The IRA contains 104 individual programmes across clean energy, domestic industry and manufacturing, clean vehicles, home decarbonisation, a green bank, and cutting farming emissions. The investments in energy security and climate change include:

- $60 billion to support onshore domestic clean energy manufacturing
- $60 billion for 'environmental justice' priorities to drive investments into disadvantaged communities
- $30 billion for states and electric utilities to accelerate the transition to clean electricity
- $27 billion to support the deployment of emissions reduction technologies
- $20 billion to support climate-smart agriculture practices
- $9 billion for consumer home energy rebate programmes.

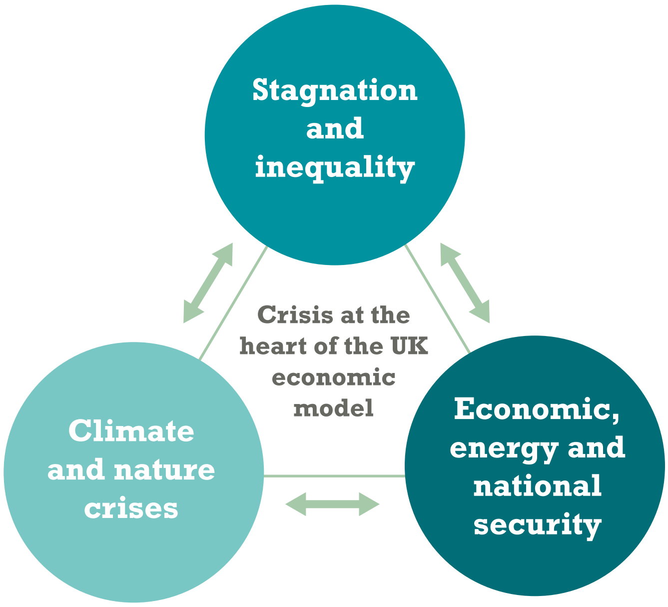
KEY LESSONS FROM THE IRA FOR THE UK

1. The UK faces similar challenges to the US that the IRA is seeking to address, but the UK is more vulnerable and its response is, by comparison, completely inadequate.

The IRA is part of a suite of measures introduced by the Biden administration to respond to the three mega trends afflicting the US economy and society (see previous chapter). Similar issues face the UK, yet it is more vulnerable and its response is, by comparison, completely inadequate.

- **Stagnation and inequality:** The IMF forecasts that the UK economy will be the only one in the G7 to shrink in 2023, a worse performance even than Russia (BBC 2023). However, this is part of a longer-term trend. Growth and productivity in the UK have stalled since the 2007/8 financial crisis, increasingly diverging from other advanced economies (CEJ 2018). The UK's productivity gap with France, Germany, and the US has widened by an average of 7 percentage points since 2008 to stand at 16 per cent (Shah and Thwaites 2023). Moreover, the gains from the growth we have experienced both now and prior to the financial crisis are uneven. These inequalities are spatial, with deep divides between regions and places in terms of income, employment levels, and productivity (Johns 2023).
- **Energy, economic, and national security:** Russia's invasion of Ukraine has sparked a new political and policy debate on the UK's national, energy and food security. The evidence overwhelmingly points to the need to scale up renewables and low-carbon sources of energy, roll out clean heat technologies such as heat pumps, and to curb energy demand with a focus on improving the energy efficiency of the UK's homes (Green Alliance 2022). Likewise, the greatest risk to the UK's food security are the escalating impacts of climate change. These impacts extend well beyond just food security with much of the UK's critical national infrastructure vulnerable to impacts of climate change like extreme weather. These issues are increasingly being seen as a major issue of national security with calls for NATO to prioritise climate change as a security issue (Farhan et al 2022).
- **Climate and nature crises:** We are now in the crucial decade for environmental action. The UK has done more than most countries to drive down its emissions and has met its recent commitments on emissions reduction. However, it is currently not on track to meet future targets and does not have sufficient policies in place to meet them. The UK's economic model is also failing to protect and restore nature – the UK is one of the most nature depleted countries in the world (EJC 2021).

FIGURE 1: THE SIGNIFICANT TRENDS IMPACTING THE UK



Source: Author's analysis

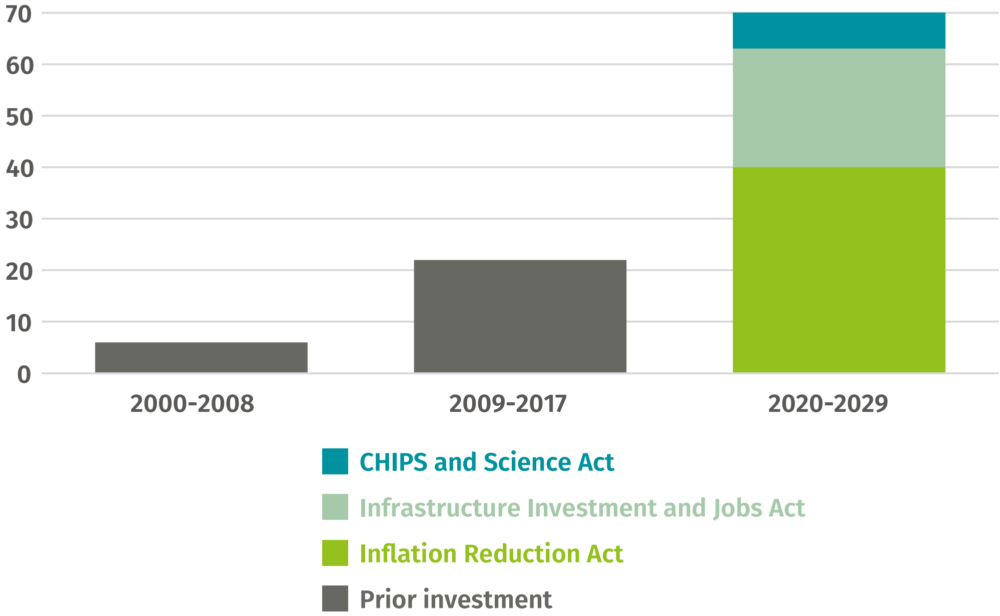
2. **There is a growing international consensus on green investment and industrial policy, but the UK is now an outlier**

    The passage of the Inflation Reduction Act, CHIPS and Science Act, and the Infrastructure Investment and Jobs Act, two of which were passed on a bipartisan basis, mark a significant departure in US economic policy and represent, in the words of one commentator, the 'most significant attempt to revive industrial policy in the western capitalist world since the aftermath of the second world war' (Chassany 2023).

    The investment contained within the IRA is likely to be even higher than official estimates which predict $394 billion in spending over the next decade on climate and energy (CBO 2023). The uncapped nature of the tax credits mean public spending could exceed $800 billion – and additional private spending could potentially take the total to up to $1.7 trillion (Credit Suisse 2023). The CSA and the IIJA also contain significant climate investments. All told, the US federal government is set to more than triple its average annual spending on climate and clean energy this decade relative to the 2010s (ibid).

FIGURE 2: US FEDERAL CLIMATE SPENDING HAS TRIPLED AS A PROPORTION OF GDP BECAUSE OF THE IRA AND OTHER RECENT LEGISLATION

US federal government's average annual climate spending



Source: Credit Suisse 2022

Local content requirements contained within the IRA mean a large amount of the funding is only available to companies whose goods are assembled or sourced either domestically or in countries with a free trade agreement with the US (eg Mexico and Canada). There are also production tax credits available for domestic manufacturing of components for solar and wind energy, inverters, battery components, and critical materials (Boehm and Scalamandre 2022). Some estimates suggest that this means around 90 per cent of domestic demand could come from domestic manufacturing supply chain by 2030 (Credit Suisse 2022). There is no doubt that the US is set to become a dominant energy supplier in the low carbon economy. While these measures present challenges beyond the US' borders in terms of protectionism and trade, they also offer potential learning effects and cost reductions globally (Steitz 2023).

The IRA's ambition and approach could be matched by the EU, which has introduced an $891 billion Covid-19 recovery plan supporting technological innovation, digitalisation, and a greener Europe. It has also adopted the European Green Deal Initiative, and is proposing the introduction of the GDIP.

While some diplomatic wrangling may secure some concessions for the US' allies, including the UK, most of the measures contained within the IRA and other bills will remain unaltered. Consequently, the UK could take a considerable economic hit. Existing key industries (such as the automotive industry) were already facing competitiveness issues even before the threat of investment being shifted towards the US. Organisations from the Confederation of British Industry to the Trade Unions Council have expressed concern that the UK risks being left behind (CBI 2023, TUC 2021).

The UK has responded to the energy crisis, launching its British Energy Security Strategy (BEIS 2022) in April 2022 and by creating the new Department for Energy Security and Net Zero. However, even on its own terms, the UK government's interventions have been deemed largely inadequate. The energy security strategy was widely criticised at the time for doing little to increase supply and curb demand in the short term, or offer a convincing medium-term response (Murphy et al 2022, Sasse and Bartrum 2022).

IPPR has previously identified a significant gap in green investment in the UK to meet the scale of the climate and nature crisis, calling for a minimum public investment of £30 billion on an annual basis up until at least 2030 (EJC 2021). While the Labour party has committed to an additional £28 billion in annual investment over a 10-year period through its Green Prosperity Plan, the UK government has thus far come nowhere near matching the level of ambition committed to by the US and being considered in the corridors of Brussels. The longer the UK waits to respond, the further behind it will fall in the global green race to net zero.

3. Place-based industrial policy can deliver for climate and levelling up

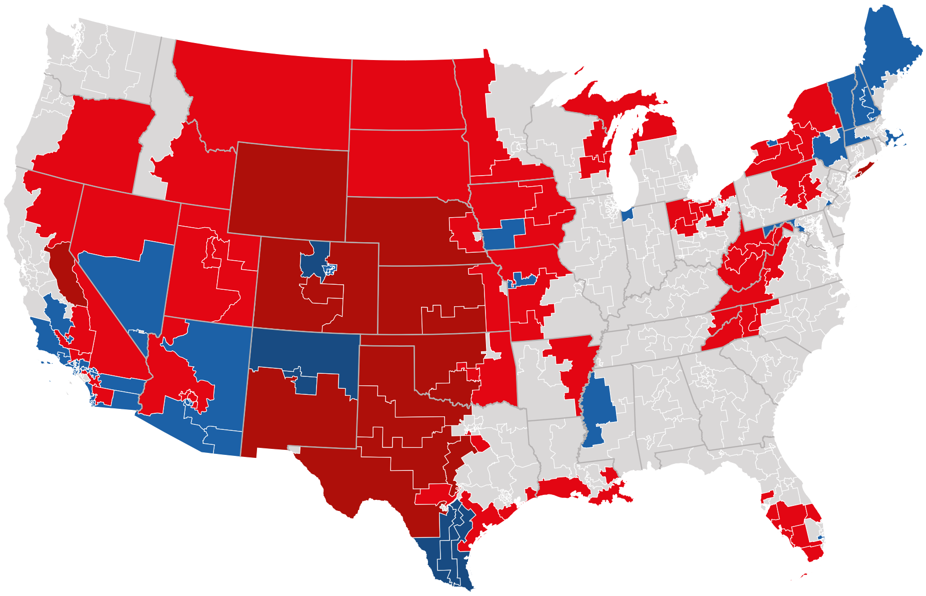
In addition to significant investment and subsidies, local content requirements, and domestic production tax credits, a big feature of the IRA is also targeted spending on 'energy communities' and 'low-income communities'. This strategy aims to deliver a just transition to support those communities most affected in the short term and least able to adapt.

Politics on climate and the environment is far more polarised in the US compared to the UK (Akehurst 2021) so it was no surprise when the IRA passed without a single Republican vote. However, the act could still build cross-party support and longevity (and potentially transform climate politics in the US) due to the geographical spread of its economic benefits.

Analysis by Brookings and American Power have shown that fossil fuel hubs in the US are also the very areas with greatest potential for renewable energy production (Tomer et al 2022), are the most likely to benefit from investment through the IRA, and are also far more likely to be represented by Republicans (ibid, American Power 2022, Milman 2023).

FIGURE 3: THOSE STATES MOST LIKELY TO BENEFIT FROM RENEWABLE ENERGY INVESTMENT ARE MORE LIKELY TO BE REPRESENTED BY REPUBLICANS

Party representation and renewable energy potential by congressional district



Source: Tomer et al (2022)

Work by IPPR and Onward, among others, has shown that there is a strikingly similar landscape in the UK with respect to the concentration of existing carbon-intensive industry, the areas the government wants to level up, and potential opportunities in the net zero economy (Birkett et al 2023, Laybourn-Langton et al 2017, Jung and Murphy 2021).

IPPR's work has shown that the north of England, for example, has several 'prime capabilities' that represent major economic assets relevant to the net zero economy, such as in advanced manufacturing – with a particular focus on materials and processes - and energy - with expertise around generation, storage and low-carbon technologies and processes, especially in nuclear and offshore wind (Laybourn-Langton 2017). More recent analysis has shown there to be a higher potential for the growth of businesses within the net zero economy outside of London - the North East, Scotland, Northern Ireland, and the South West in particular (ECIU 2023).

What is lacking in the UK, however, is a similar commitment to public investment allied with place-based industrial strategy to realise the benefits of the net zero economy and unleash the latent potential and assets that are so well distributed across the UK. In failing to institute such an approach, the UK already risked squandering the economic opportunities of the net zero transition but the IRA significantly increases the jeopardy in attracting private investment and industrial actors away from the UK and towards North America.

4. The UK can draw on a wider toolkit of green industrial policy but must be more focused in its use

The measures in the IRA, and the heavy reliance on subsidies and public spending, are a result of the unique political context in the US. These include the political polarisation on climate, the role of the US Supreme Court with regard to environmental regulation, and the various 'veto points' in the US political system. These present significant constraints which the Biden administration had to navigate – arguably the IRA is the only climate bill that could pass during this presidential term.

The US' economic size – its workforce, consumer markets, and capital and global trade – also enable it to take a broad approach in terms of what it subsidises (Parikh 2023). The IRA takes a 'technology agnostic' approach providing investment and subsidies across more than 20 sectors. The legislation provides incentives for electricity generation based on there being zero GHG emissions rather than supporting a specific technology. Specific incentives are also available for energy storage, nuclear, biofuels, carbon capture and storage and many more.

By contrast, a medium-sized economy such as the UK cannot hope to compete on the same number of fronts. As one commentator has put it, 'Britain needs to decide what it wants to be good at' (ibid). It neither has the economic might nor the capacity or bandwidth to support such a diverse mix of sectors and technologies. This will require identifying those sectors and industries where the UK requires a stake for security purposes, whether that be for national, energy, or economic (supply-chain) security. Then identifying where its current or future comparative advantage lies – this would include sectors such as advanced manufacturing, life sciences, and green technology such as offshore wind – all areas whose growth would disproportionately benefit regions outside of the South East (Curran et al 2023). The UK government's own review into net zero suggested that it should focus on providing greater certainty for a smaller number of 'major priorities' for net zero (Skidmore 2023).

The UK can, however, draw on a wider toolkit than the US (for the political reasons explained above) including regulatory measures - the 2030 phase out of new petrol and diesel vehicles a prime example. But to reap the economic benefits of such measures the UK must learn from the US approach combining regulation with greater public investment and green industrial policy.

5. The UK must learn from the unprecedented certainty and policy stability that the IRA provides.

The IRA has embedded its measures within a 10-year framework (something which the EU has also done) (Satchell 2023), signalling policy stability for developers and investors. Most of the tax credits included within the IRA are available from 2023-32, providing certainty and predictability and coincides with the critical decade for climate action (Credit Suisse 2022). In addition, the supply side credits (eg for CCUS, clean electricity and hydrogen) are linked to when a project commences.

A project commencing in 2031 could, for example, still be receiving subsidy support into the 2040s. The unprecedented scale of the financial support available through IRA is matched only by its longevity. The provisions in the act are in place on both the demand and the supply-side with, for example, incentives available for energy efficiency, heat pumps and electric vehicles (ibid).

By contrast the UK's approach to net zero is beset by short-termism. The government's own independent review into net zero found that stakeholders across a wide range of sectors were frustrated by 'a lack of long-term thinking, siloed behaviour from government departments, and uncertainty over the length of funding commitments' (Skidmore 2023).

IPPR's cross-party Environmental Justice Commission (2021) called for the creation of a Net Zero and Just Transition Delivery body to support the creation of long-term just transition plans across every sector in addition to long-term funding commitments (as outlined above). Indeed, the government's independent review also argued for 'greater certainty, consistency, and clarity' on net zero, and the overriding message of the review was for far greater long-term planning, policy commitment, and funding at the national, regional, and local level (Skidmore 2023).

6. Climate action can be a jobs engine, but the UK must focus on quality not just quantity

Analysis from the Political Economy Research Institute (PERI) at the University of Massachusetts Amherst found that more than 100 climate, energy, and environmental investments in the Inflation Reduction Act will create more than 9 million jobs over the next decade - an average of nearly 1 million jobs each year. If realised this would be equivalent to 5 per cent of the current US civilian labour force and more than five times the number of people currently employed by the fossil fuel sector (around 1.7 million workers) (Credit Suisse 2022).

Moreover, the legislation goes further in encouraging the creation of high quality jobs by linking incentives to fair wages (requiring for example 'prevailing wages' in private development projects such as power generation in order to receive certain tax credits) and the use of union and registered apprenticeships schemes (BlueGreen Alliance 2022a). Such a focus has also enabled broad support for the climate measures announced including by trade unions who have actively championed the climate investment (UAW 2022, USW 2022, BlueGreen Alliance 2022b). Encouraging high-quality, well-paid jobs, not only helps secure more sustained political support, but can help tackle other problems from low-wages to reducing the need for social security support for those in work.

IPPR's own analysis has shown that in the UK the transition to a cleaner, healthier future presents one of the biggest opportunities to create high-quality jobs in history. Our analysis suggests that the transition will create approximately 1.68 million jobs by 2035, 780,000 direct jobs and 905,000 indirect jobs in sectors for clean products and services (EJC 2021).

But equally IPPR has long recognised the need for these jobs to be high-wage, good-quality jobs. IPPR has argued for a 'high-quality clean jobs' standard, covering wages, terms, and conditions, which should be linked to public investment as well as worker-led 'fair transition agreements' which be co-developed between workers, trade unions, business, and government (ibid).

7. Corporate safeguards to 'socialise rewards as well as risks'.

The Biden administration is increasingly using conditionality through the IRA, IIJA, and CSA, to shape and 'bend' corporate behaviour (Chassany 2023). In addition to the job standards and wage requirements contained within the IRA, the federal government is issuing guidance for the CSA which include strict financial conditions including preventing share buybacks and the need to share excess profits with the government (Tankersley and Swanson 2023).

Firms in receipt of federal subsidies will also be expected to guarantee high-quality and affordable childcare for their workers (Tankersley 2023) and they're also 'strongly encouraged' to sign collective bargaining deals with unions ahead of building new plants (Chassany 2023).

IPPR has long argued that similar safeguards should be utilised in the UK to ensure that the gains that arise from public investment are distributed fairly and that corporate governance and behaviour are 'consistent with our collective longer-term environmental and ethical goals' (Longergan and Blyth 2020, Jung and Murphy 2020, Evans et al 2023).

8. **The UK should play a key role in greening the global trade regime.**

   Certain provisions have caused the UK and the EU[2] among others to raise concerns that the act confers significant advantages on US producers over foreign ones. Local content requirements have drawn particular ire. As well as seeing a loss of competitive advantage, jobs, and investment at home, this could also set off a host of retaliatory measures that hurt climate action or raise barriers for developing countries or a full-blown trade war that harms all parties (Steitz 2022).

   Equally, the IRA could provide a new impetus for collaboration on reforming the global trade regime in a way that is fair and is flexible enough to allow the divergent approaches (often needed to meet domestic political contexts) to deliver globally. For example, the concern expressed by the EU and the UK has seen Joe Biden commit to 'coordinate and align' with the US' allies and the administration remains open to compromise provided it doesn't involve reopening the legislation.

   Regardless of the short-term compromises, it's clear that longer-term reform of the international trade regime is required to allow countries to move faster on their climate and nature commitments. As the IRA demonstrates, countries are only able to pass the environmental bills that their domestic politics will allow. Where the US has leaned heavily on subsidy through public investment, others will use other tools from regulation to carbon pricing. The international trade regime needs to allow for these divergent approaches albeit with a common set of high standards and goals (Jackson and Hellmich 2022, Peters et al 2022).

   With its history of climate action, the UK should be leading this process, working with its allies to reform the World Trade Organisation (WTO) and the international trade regime to allow for the maximum level of ambition on climate action. IPPR has previously argued that the US and the UK should agree common aims for WTO reform to safeguard and improve labour and environmental standards, including a moratorium or temporary 'peace clause' to allow for members to enact certain trade-related climate mitigation measures without facing a WTO challenge. However, at present, the UK is failing even to incorporate high environmental standards within its own trade deals (Morris 2022).

CONCLUSION

The UK risks falling behind international competitors in a race-to-the-top between nations on capturing the economic 'upside' of the transition to net zero.

If the UK fails to make it itself an attractive and viable option in the long term, then businesses and investors will choose to go elsewhere. This will also impact the speed of the transition in the UK as policymakers and businesses look for affordable ways to support business, which may lead to short-term decisions to delay decarbonisation policies.

The UK should learn the lessons of the IRA and adopt a green industrial strategy approach, combining intervention, market shaping, regulation, subsidy, and capital investment to maximise the economic benefits of the transition and accelerate the reduction in emissions and restoration of nature.

2 The EU is reported to have noted 'at least nine points' in the IRA which may be deemed a breach of international trade rules (Citigroup 2022).

REFERENCES

Akehurst S (2021) 'Why no climate culture war in the UK?'. https://strongmessagehere.substack.com/p/why-no-climate-culture-war-in-the

American Power (2022) 'Clean Energy Investing in America'. https://cleanpower.org/wp-content/uploads/2022/12/ACP_Clean_Energy_Investing_In_America_Report_Q422.pdf

BBC News (2023) 'UK expected to be only major economy to shrink in 2023 – IMF', news article. https://www.bbc.co.uk/news/business-64452995

Birkett E, Luke A, and Bunt P (2023) *Green Jobs, Red Wall: How green industrial jobs can boost Levelling Up*, Onward. https://www.ukonward.com/wp-content/uploads/2022/12/Onward-Green-Jobs-Red-Wall-Report-1.pdf

BlueGreen Alliance (2022a) *A User Guide to the Inflation Reduction Act: How New Investments Will Deliver Good Jobs, Climate Action, and Health Benefits*. https://www.bluegreenalliance.org/wp-content/uploads/2023/02/BGA-IRA-User-Guide-Print-FINAL-Web.pdf

BlueGreen Alliance (2022b) *Letter to Senate on Inflation Reduction Act 12*. https://www.bluegreenalliance.org/wp-content/uploads/2022/08/080322-Letter-to-Senate-on-Inflation-Reduction-Act-.pdf

Boeme L and Scalamandre Chiara (2022) *EU-US climate and energy relations in light of the Inflation Reduction Act*, European Parliament. https://www.europarl.europa.eu/RegData/etudes/BRIE/2023/739300/EPRS_BRI(2023)739300_EN.pdf

Chassany A S (2023) 'Joe Biden teaches the EU a lesson or two on big state 'dirigisme'', The FT. https://www.ft.com/content/ef04638d-e4b6-4bcc-86c9-fac2cc04d198?shareType=nongift

Citigroup (2022) *Protectionism and the US Inflation Reduction Act*, Global Insights. https://icg.citi.com/icghome/what-we-think/global-insights/insights/protectionism-and-the-us-inflation-reduction-act

Climate Power (2022) 'Clean Energy Boom'. https://climatepower.us/wp-content/uploads/sites/23/2023/02/Clean-Energy-Boom-100K-Report.pdf

IPPR Commission on Economic Justice [CEJ] (2018) *Prosperity and Justice: A plan for the new economy*, IPPR. https://www.ippr.org/research/publications/prosperity-and-justice

Confederation of British Industry [CBI] (2023) *The UK is falling behind on green growth*. https://www.cbi.org.uk/articles/the-uk-is-falling-behind-on-green-growth/

Congressional Budget Office (2022) *Congressional Budget Office Cost Estimate for the Inflation Reduction Act*. https://www.cbo.gov/system/files/2022-09/PL117-169_9-7-22.pdf

Credit Suisse (2022) *US Inflation Reduction Act: A Tipping Point in Climate Action*. https://s3.documentcloud.org/documents/23257578/ira-a-tipping-point-in-climate-action-1.pdf

Curran B, Martin R, Muller S, Nguyen-Tien V, Oliveira-Cunha J, Serin E, Shah A, Valero A and Verhoeven D (2022) *Growing clean: Identifying and investing in sustainable growth opportunities across the UK*, The Resolution Foundation. https://economy2030.resolutionfoundation.org/wp-content/uploads/2022/05/Growing_clean_report.pdf

ECIU (2023) Mapping the net zero economy: Net zero impacts in national, regional and local economies, ECIU and CBI. https://ca1-eci.edcdn.com/Mapping-net-zero-economy-ECIU-CBI-DataCity-Jan2023.pdf?v=1675131416

Environmental Justice Commission [EJC] (2021) *Fairness and opportunity: A people-powered plan for the green transition – Final report of the Environmental Justice Commission*, IPPR. http://www.ippr.org/research/publications/fairness-and-opportunity

Evans J, Hayes C and Dibb G (2021) *Buy back better: The case for raising taxes on dividends and buybacks*, IPPR and Common Wealth. http://www.ippr.org/publications/buy-back-better

Farhan A, van Rij A and Kossman S (2022) *NATO must prioritize climate change as a security issue*, Chatham House. https://www.chathamhouse.org/2022/06/nato-must-prioritize-climate-change-security-issue

Green Alliance (2022) *What does war in Ukraine mean for UK energy, and how can we limit reliance on Russian oil and gas?* Green Alliance. https://green-alliance.org.uk/wp-content/uploads/2022/05/Briefing-What-does-war-in-Ukraine-mean-for-UK-energy.pdf

Islam F (2023) 'Is UK being left behind in global fight for investment?', BBC News, news article. https://www.bbc.co.uk/news/business-64405020

Jackson S and Hellmich M (2022) *The Inflation reduction act & the EU. The need to strengthen the transatlantic trade relationship*, E3G and Adelphi. https://e3g.wpenginepowered.com/wp-content/uploads/IRA-briefing.pdf

Johns M and Hutt H (2023) *Looking out to level up: How the North and the UK measure up – State of the North 2023*, IPPR. http://www.ippr.org/publications/looking-out-to-level-up

Jung C and Murphy L (2020) *Transforming the economy after Covid–19: A clean, fair and resilient recovery*, IPPR. http://www.ippr.org/research/publications/transforming-the-economy-after-covid19

Lonergan E and Blyth M (2020) *Beyond bailouts*, IPPR. http://www.ippr.org/research/publications/beyond-bailouts

Milman O (2023) 'Republicans in the US 'battery belt' embrace Biden's climate spending', *The Guardian*. https://www.theguardian.com/environment/2023/feb/22/climate-spending-republican-states-clean-energy-funding

Morris M (2022) *Trading up: Proposals for a progressive US-UK trade partnership*, IPPR. http://www.ippr.org/research/publications/trading-up-progressive-us-uk-trade

Office for National Statistics (2023) *Low carbon and renewable energy economy, UK: 2021*, statistical release. https://www.ons.gov.uk/economy/environmentalaccounts/bulletins/finalestimates/2021

Peters, Jonny and Velasco, Ignacio Arroniz (2022) *Climate diplomacy and trade: three priorities for delivering green trade and WTO reform.* https://e3g.wpenginepowered.com/wp-content/uploads/E3G-Climate-diplomacy-trade-briefing.pdf

Murphy L, Emden J and Parkes H (2022) *The Chancellor's energy plan is a sticking plaster full of holes,* blog. https://www.ippr.org/blog/energy-crisis-support-analysis

Parikh T (2023) 'Britain needs to decide what it wants to be good at', The FT. https://www.ft.com/content/2240fde9-7951-4a2a-aa4d-2230d38c1eae?sharetype=blocked

Sasse T and Bartrum O (2022) *The IfG response to the British Energy Security Strategy*, Insight Paper, Institute for Government. https://www.instituteforgovernment.org.uk/sites/default/files/publications/energy-security-strategy-response.pdf

Satchell K (2023) *What are the UK's options in the face of an EU-US clean tech subsidy race?* https://www.global-counsel.com/sites/default/files/2023-02/20230209%20Kelly%20Satchell%20-%20EU-US%20clean%20tech%20subsidy%20race.pdf

Shah K and Thwaiters G (2023) *Minding the (productivity and income) gaps Decomposing and understanding differences in productivity and income across countries*, Resolution Foundation. https://economy2030.resolutionfoundation.org/wp-content/uploads/2023/02/Minding-the-productivity-and-income-gaps.pdf

Skidmore C (2023) *Mission Zero, Independent Review of Net Zero*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1128689/mission-zero-independent-review.pdf

Steitz (2022) *The US Inflation Reduction Act: context, overview, economic implications* https://static.agora-energiewende.de/fileadmin/Projekte/2022/2022-10_INT_Korea_Green_New_Deal/2022-12_02_Presentation_Korea_green_new_deal_Janek_Steitz.pdf?utm_source=substack&utm_medium=email

Tankersley J (2023) 'To tap federal funds, chip makers will need to provide child care', The New York Times. https://www.nytimes.com/2023/02/27/us/politics/child-care-chip-makers-biden.html

Tankerlsey J and Swanson A (2023) 'Biden's Semiconductor Plan Flexes the Power of the Federal Government', The New York Times. https://www.nytimes.com/2023/02/27/us/politics/chips-act-biden-commerce-department.html?smid=tw-share

Tomer A, Kane J, and George C (2022) *How renewable energy jobs can uplift fossil fuel communities and remake climate politics.* https://www.brookings.edu/research/how-renewable-energy-jobs-can-uplift-fossil-fuel-communities-and-remake-climate-politics/

Trade Union Congress (2021) *Safeguarding the UK's manufacturing jobs with climate action: carbon leakage and jobs*. https://www.tuc.org.uk/research-analysis/reports/safeguarding-uks-manufacturing-jobs-climate-action-carbon-leakage-and-job

United Auto Workers [UAW] (2022) *UAW Statement in Support of Inflation Reduction Act 11*. https://uaw.org/uaw-statement-support-inflation-reduction-act/

United Steel Workers [USW] (2022) *USW Applauds House Passage of Inflation Reduction Act 10*. https://m.usw.org/news/media-center/releases/2022/usw-applauds-house-passage-of-inflation-reduction-act

Watson Institute (2022) The case of the US Inflation Reduction Act, presentation by the Watson Institute. https://www.youtube.com/watch?v=WQ-K2PTsN2I

ABOUT IPPR

IPPR, the Institute for Public Policy Research, is the UK's leading progressive think tank. We are an independent charitable organisation with our main office in London. IPPR North, IPPR's dedicated think tank for the north of England, operates out of offices in Manchester and Newcastle, and IPPR Scotland, our dedicated think tank for Scotland, is based in Edinburgh.

Our primary purpose is to conduct and promote research into, and the education of the public in, the economic, social and political sciences, science and technology, the voluntary sector and social enterprise, public services, and industry and commerce. Other purposes include to advance physical and mental health, the efficiency of public services and environmental protection or improvement; and to relieve poverty, unemployment, or those in need by reason of youth, age, ill-health, disability, financial hardship, or other disadvantage.

IPPR
14 Buckingham Street
London
WC2N 6DF
T: +44 (0)20 7470 6100
E: info@ippr.org
www.ippr.org
Registered charity no: 800065 (England and Wales),
SC046557 (Scotland)

GET IN TOUCH

For more information about the Institute for Public Policy Research, please go to www.ippr.org

You can also call us on +44 (0)20 7470 6100, e-mail info@ippr.org or tweet us @ippr

Institute for Public Policy Research

Registered Charity no. 800065 (England & Wales),
SC046557 (Scotland), Company no, 2292601 (England & Wales)

The progressive policy think tank