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insight.

Climate Change

Elena Nikolaou

Letter from the Editor-in-Chief

Welcome to the 28th issue of Insight Magazine!

I am thrilled to introduce our very first issue dedicated to one of the most pressing challenges of our time: Climate Change. The articles in the following pages explore the climate crisis through various economic topics, from examining windmills in Scotland's backyard to broaching carbon leakage and climate protectionism on a global scale. The issue aims to offer insightful analyses and thought-provoking discussions, envisioning a path towards a more sustainable and greener future.

On behalf of the Insight community, I would like to take this opportunity to thank the School of Economics for their continued support of the magazine, without which this publication would not be possible. Additionally, a special thank you to our writers, editors and producers for all their hard work in bringing this issue to life.

If you think you might be interested in joining our editorial team next year, please see our Facebook page or Instagram!

All the best,
Nina Davies

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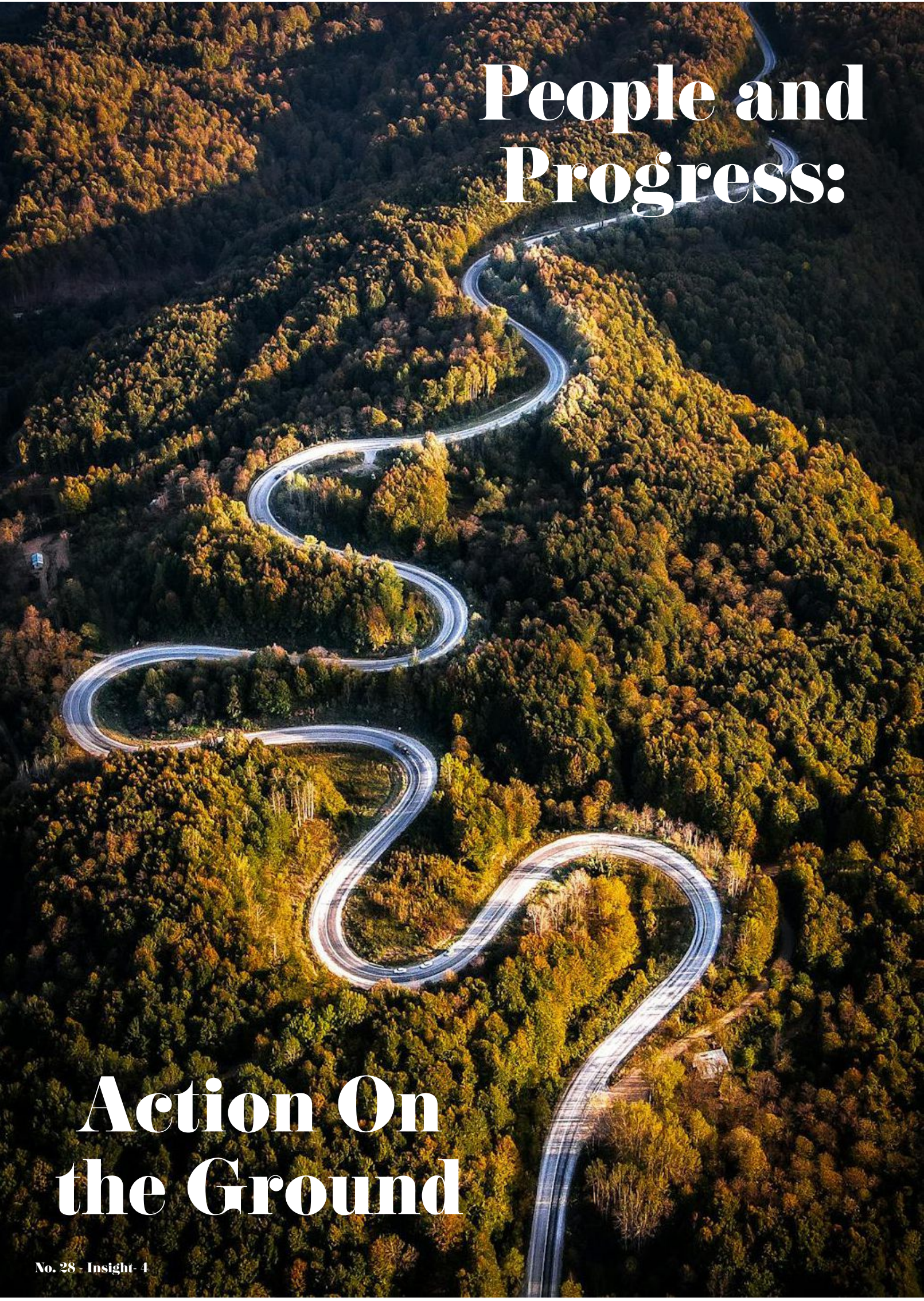


People and Progress:

Action On the Ground

Winds of Change

Tackling NIMBYism for a Sustainable Future

In this article, ***Olivia Macklin*** *unpacks the Prisoner's Dilemma of wind farm resistance and explores potential solutions for mitigating NIMBYism within Scottish communities.*

Wind farm developments face a problem akin to the Prisoners' Dilemma. The Prisoner's Dilemma refers to a situation in which two players acting in their rational self-interest results in a suboptimal outcome for both players. In the context of UK wind farm development, individual communities may rationally oppose wind farms on the basis of noise pollution, visual intrusion and property devaluation. Clearly, these are valid concerns for any community. Thus, protesting the development of wind farms is 'rational.' Nonetheless, if every community acts 'rationally' in isolation, this can lead to a wholly detrimental societal situation – one without wind farms. Additionally, if there is an insufficient development of renewable energy infrastructure, our future is put at risk. This describes a wave of 'nimbyism' sweeping across the UK causing project delays and cancellations, leading to lost green energy capacity and prolonging our reliance on fossil fuels. Fostering swift community acceptance of wind farm developments is, therefore, critical in achieving a sufficient pace of transition to renewables.

Compensation mechanisms, like Wind Farm Community Benefit Funds, can remedy community opposition and their associated Prisoner's Dilemma. These funds provide either direct compensation to local communities in the form of grants, or indirect compensation through electricity bill discounts. For success, these funds must be large enough to win over opponents inside the community without decimating wind farm developers' profits. In fact, even the perception of a fair redistribution of profits could secure community approval, letting projects move forward. Nonetheless, these community benefit funds cannot win unanimous support: fervent dissenters are unlikely to change their position for token sums from multinational wind farm developers. This lack of trust is hard to fix. Unfortunately, bargaining costs complicate the problem even further since, even if a mutually beneficial solution exists, the costs of negotiating a deal can make it too costly to come to pass.

Clear legislation could address these shortcomings. For example, one could imagine a system in which wind farm developers are mandated to compensate affected communities, targeting the bargaining cost problem. However, no such legal framework currently exists in Scotland. Instead, communities face overwhelming difficulties invoking existing laws, such as the 1997 Town and Country Planning (Scotland) Act, in the context of windfarm development. This compares starkly to Denmark, where legislation mandates that wind farm developers compensate homeowners for loss of value. There, affected households are compensated an average of £5500 – nonetheless, recipients often find this inadequate. The inflexibility of Denmark's legislation is also problematic since it does not allow for the recognition of heterogeneous impacts on community members, damaging community buy-in even further. In contrast, Scotland's Community Benefit Funds are not mandated; rather, they are gestures of goodwill from developers. Despite not being legally enforceable, they have, nonetheless, become the norm during the operation and maintenance of onshore wind farms. Irrespective, this lack of a legal framework undermines the funds' effectiveness since communities must trust that developers will keep their promise to pay out.

Another potential solution allocates decision-making powers away from local communities and into the hands of national governing bodies. National bodies can (in principle) more accurately evaluate local and non-local costs and benefits, facilitate coordination between disparate communities with opposing incentives and, in doing so, address the miscoordination induced by this Prisoners' Dilemma type problem. However, this approach risks alienating local communities by fundamentally undermining their autonomy and perhaps resulting in even stronger opposition. Communities must have confidence in the government and, thus, for this approach to succeed, it must strike a balance between facilitating coordination and maintaining local involvement in the decision-making process.

Ultimately, a lack of trust in firms, government and between communities is the problem challenging both reforms. Thus, fostering local trust and transparency in decision-making processes is paramount for addressing the problems with these policies and, consequently, for achieving a sustainable and just transition to renewable energy. Hopefully, with communities' needs heard, the private benefits of windfarm development can be redistributed through mechanisms like Community Benefit Funds. This means that local communities with wind farms in their proverbial 'backyards' can be compensated appropriately. One can hope that a combination of clear legislation and local community involvement, nested in a wider framework of national coordinators, can increase trust, reduce frictions and realise mutually-beneficial outcomes. If this can be achieved across the board, then there may be hope for a sustainable future.

Illusory Progress: The Future of Climate Activism in a Warming World

Climate activism has become a focal point in addressing the climate crisis. ***Grant VanderKolk*** *explores the behavioural economics underpinning such engagement and forewarns of a dire future marked by radicalisation should necessary action not be taken.*

Carbon emissions continue to rise, forests are disappearing, and an ecological activist is murdered every other day.
Still, climate activism is miraculously peaceful.

Our species is losing the battle for our planet: the previous goal of two degrees celsius or less is now improbable, economic motivations behind fossil fuel consumption only increase and sea levels will continue to rise by a metre. However, there are no destructive attacks at any considerable scale. Despite our luck, resorting to conflict is a choice that falls under the same behavioural economics that defines insecurity throughout the world– a risk expedited because climate change will directly affect those who have taken the smallest share of carbon emissions.

The Spectre We've Created

A legacy of colonialism and economic exploitation has created a Global South that is uniquely vulnerable to climate change and will bear the highest human cost. However, what is striking is that, due to the abstract and prolonged development of climate change, 90% of the activists are typically: 1) educated (they hold university degrees), and 2) White. While the intentions of these activists are pure, existing climate activism is spearheaded by those who have benefited from climate change, not those who stand to suffer. These activists then, seen in groups like Extinction Rebellion and Just Stop Oil, are acting from altruistic but divested motives.

Accordingly, contemporary climate activism has focused on making headlines and "raising awareness," despite the gravity of the situation. This is due to the behavioural economics behind decision-making. Climate activists are peaceful because they consciously or subconsciously prefer the familiar and, to a large extent, the status quo. To these privileged groups, destructive behaviour brings immense cost but next to no personal benefit. While there is value in raising awareness, it will not be enough. Those advocating for awareness do not stand to lose enough to force progress.

When Despair Fuels Action

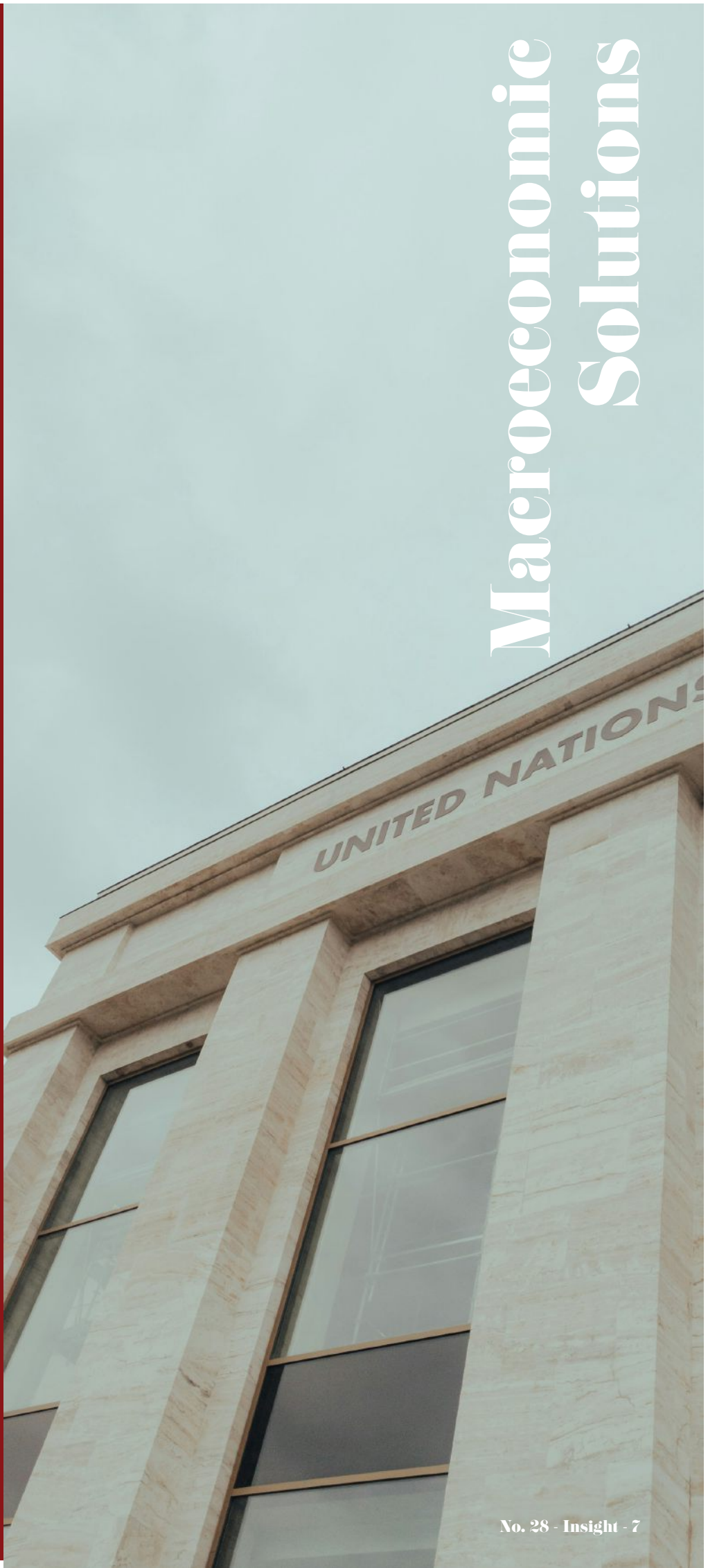
The lack of meaningful action has created an uncertain situation. We have begun to see the effects of climate change – those who stand to have their countries flooded have begun to feel the effects of the Global North's excess. When climate change leaves the university classroom, imposing itself in the lives of those with no choice, the face of climate activism will change. Those who have lost will become those who act.

This change will happen despite the fact that the West often paints terrorists as criminally insane or blinded by religious fervour to the point that they fail to value their own lives, as if the most desperate actions are somehow different from the cost-benefit analysis that drives all other decision-making. This perspective is useless when it comes to preventing instability and terror. There is no evidence to suggest that the process by which one makes the tragic choice to resort to destructive action is fundamentally different from deciding whether to walk or take the bus to class. The decision to leverage civilian lives and property is made for the same reasons, whether that decision is made for political, religious or ecological reasons. To understand past actions, we will examine two well known examples of coercive action: why they occurred and how we can prevent escalation.

Firstly, competition drives activist groups to pursue the most effective means of differentiating from their competitors. For example, Palestinian secular nationalism was mostly peaceful when it had a monopoly over pro-Palestine politics. However, as time went on events like the First Intifada in 1987 spurred competition. Hamas formed to fill a gap in the audience, embracing open war at the expense of peaceful solutions in its 1988 Charter. Contemporary ecological activism may exist in a similar market to the one that confronted Hamas. For Hamas, demographics shifted, tensions flared and competition grew, competition that bred distinction and a departure from peaceful protest. As the world begins to warm, it is natural to assume that other groups will seek to compete for relevance, risking that these groups will seek to differentiate themselves and abandon nonviolence. More directly, Osama bin Laden's 1996 declaration of War against the United States illustrates in many ways the competitive "market for violence". While there is a religious tone, it is a document that equally points out unjust regimes, domestic debts and, crucially, oil revenue. The declaration came in 1996 not because the Qur'an had changed but because domestic economic decline had created a desperate minority, where terror had been able to infiltrate as an 'affordable option'. The climate crisis may not change, but its effects will. These consequences risk creating a desperate minority who, outraged by the unjust distribution of ecological destruction, retaliate against those who flooded their cities.

Avoiding Disaster

To the public, these systemic breakdowns of peaceful protest represent yet another reminder that the current action is not enough. We have lost the ability to avoid any consequences; the ability to safeguard the livelihoods of millions. This is a crisis foisted on the world's most desperate. To assume the status quo of educated, restrained climate protest is dangerous, too many lives are at stake. While emissions need to be cut, people too must be saved, climate refugees welcomed, and subsidies paid. These policies are economically and politically expensive, but inaction risks the unthinkable. We may no longer have a choice.



Unilateral Climate Action and the Case for Carbon Clubs: Addressing Carbon Leakage

In the pages of this article, ***Zubiya Moin*** *dives deep into the concept of 'carbon leakage' through the lens of the EU's Emissions Trading System, proposing a hybrid solution to leakage that combines the benefits of both carbon borders and climate clubs.*

The escalating challenge of climate change, marked by rising temperatures year after year due to greenhouse gas emissions, is undeniable. In response, the Paris Agreement was established by 196 parties at COP 21 in 2015, aiming to cap global warming below 2°C and ideally at 1.5°C relative to pre-industrial levels. Despite these ambitions, global efforts have been uneven and sporadic, with only a handful of countries rigorously implementing measures to curb their emissions. In contrast, others hesitate, fearing the impact on economic growth. Nations such as the United States, China, India, and Japan have pledged to meet aggressive emission reduction targets by 2030 through various strategies, including emission pricing, emission caps, and carbon taxes. However, while these unilateral actions effectively lower emissions within their borders, they inadvertently cause emissions to rise in other regions– a dilemma known as carbon leakage. This raises significant concerns about the overall effectiveness of individual climate actions in achieving worldwide emission reductions.

Carbon Leakage: An Overview

'Carbon leakage' is the term used to describe a scenario where, due to the lack of uniform climate policies across nations, the implementation of rigorous emission controls in one country can inadvertently result in higher emissions in another country with more lenient environmental regulations. To simplify this concept, picture this: our planet's ability to handle the flow of carbon is like a bucket filled with water, with the water symbolising the carbon stock. The bucket's leaks signify areas with substantial emissions, and attempting to seal just one leak without tackling the rest won't lower the water level in the bucket. Similarly, cutting emissions in one region may cause them to rise in another, ergo carbon leakage.

The Channels of Carbon Leakage

Delving deeper into this concept, it's noteworthy that while some scholars debate its prevalence and extent, a significant body of research corroborates its existence with detected leakage rates fluctuating between 3% and 28%. By examining the diverse pathways through which carbon leakage occurs, we can further illuminate the severity of this challenge.

Firstly, the *Energy Market Channel* of carbon leakage arises from the interplay of demand and supply within the energy sector. Essentially, when countries commit to reduce their carbon footprint and cut back on fossil fuel consumption, global prices may drop due to relatively inelastic supply. This price reduction can encourage increased fossil fuel consumption in other nations, resulting in demand-side leakage. Concurrently, countries not participating in emission reduction efforts might boost their fossil fuel supply, causing supply-side leakages. Moreover, this situation can undermine the competitiveness of investments in clean energy by making fossil fuels more economically attractive for non-emission reducing countries.

Next, the *Competitiveness Channel* involves carbon leakage through international trade dynamics, where the production of carbon-intensive goods shifts to countries with less stringent environmental regulations. This shift is driven by the rising operational costs in countries with tough emission controls, diminishing the international competitiveness of their emission-intensive industries. As a result, industries in countries with laxer environmental policies gain a competitive edge due to lower production costs.

Lastly, operating in a manner akin to the energy market channel, the *Global Market Price Adjustment Channel* leads to carbon leakage through changes in global pricing and consumption patterns. In countries without carbon border taxes, the reduced prices of carbon-intensive products encourage higher consumption. This mirrors the dynamics observed in the energy market channel, where the absence of stringent climate policies results in increased demand for, and consumption of carbon-heavy goods. The Emissions Trading System (ETS) Initiated in 2005, the European Union's Emissions Trading System (ETS) marked the world's first foray into carbon markets, employing a cap-and-trade system to regulate emissions within the EU. This innovative system set a firm limit on overall greenhouse gas emissions, allowing for the trading of emission permits. Celebrated as a formidable tool for mitigating emissions from the EU's most carbon-intensive sectors, the ETS proved its efficacy through substantial reductions in emissions, a success supported by data from the European Central Bank.

However, the ETS did not extend its regulatory reach to include taxes on the imports of carbon-intensive goods. Consequently, while the policy

successfully lowered emissions within the EU, there was significant evidence of businesses relocating their carbon-intensive operations beyond EU borders. This resulted in a carbon leakage rate of 28% through the industry channel. Furthermore, the lack of a carbon pricing mechanism on imports led to an increase in the importation of carbon-heavy goods.

Carbon Leakage at The Border

To counteract carbon leakage, the EU announced the Carbon Border Adjustment Mechanism (CBAM) in 2021. This mechanism seeks to equalise the competitive conditions between EU industries and their global counterparts by applying a carbon cost to imports of carbon-intensive goods, particularly those most susceptible to carbon leakage, including iron, steel, cement, aluminium, fertilisers, and electricity. Designed to work in tandem with the ETS, the CBAM requires that both domestic importers and foreign exporters of these goods acquire emission permits that reflect the carbon dioxide emitted during their manufacture. This approach ensures that imported goods face the same carbon pricing pressures as products made within the EU, promoting fair competition and encouraging cleaner production practices worldwide.

The introduction of the CBAM marks a significant step towards mitigating carbon leakage. However, its effectiveness at preventing leakage has its limitations. Specifically, while the CBAM addresses leakage through the competitiveness channel by equalising the cost of carbon for imports and domestic goods, it may not fully counteract leakage via global market price adjustments, particularly through the energy market channel. This gap means that decreasing demand for fossil fuels in the EU could encourage increased consumption in non-EU countries by lowering global prices. Most scholars suggest that the impact of unilateral carbon borders is likely to be limited, suggesting that they alone cannot comprehensively reduce global emissions.

Harnessing the Best of Both Worlds

Asymmetric climate actions among nations create loopholes for free-riding, fueling carbon leakage. However, collective agreements on climate policies, particularly carbon pricing, promises substantial global emission reductions. Carbon clubs - namely, coalitions of countries working together beyond the United Nations Framework Convention on Climate Change (UNFCCC) - aim to tackle climate challenges through united efforts. By forming alliances that enforce uniform carbon pricing and regulations, these clubs can achieve more significant reductions in global emissions than isolated national efforts. If huge economies like China and the US join the mitigation effort of the EU, carbon leakage could be reduced from 28% to 3%. A prime example is the Asia-Pacific Carbon Pricing Partnership (APCPP), initiated at COP26 to harmonise carbon pricing strategies across member countries.

A climate group integrating the strengths of both climate clubs and the CBAM could significantly enhance global climate action. One solution would be to harness the synergies between a CBAM and climate club. Such a strategy would involve mandatory participation enforced collectively by the World Trade Organization (WTO) and the UNFCCC. This approach would prevent free-riding by reducing the benefits for non-member countries through measures such as a higher import tax for non-members. There would also be uniform emission standards regarding various products. This uniform trade policy would ensure equal treatment of carbon-intensive product imports across all member countries to maintain fairness and competition. Other characteristics include climate financing; a Monitoring, Reporting, and Verification (MRV) framework; and enforcement mechanisms. This integrated strategy would leverage collective action and shared goals to more effectively combat climate change on a global scale.

While unilateral climate actions and mechanisms like the EU's CBAM are steps towards addressing carbon leakage, a global effort through the formation of carbon clubs could provide a more effective solution. These clubs, by enforcing uniform climate policies and supporting green technology investments, could help prevent free-riding and ensure a more comprehensive and symmetrical approach to reducing global emissions. Even though the ETS is itself a carbon market, its participation level must increase and non-abating countries must be incentivised to engage in climate action so that we may overcome carbon leakage.

The Leaf Effect on Climate Change: An ESG-Based Approach

As the thermometer rises, the need to factor climate change into our economic choices becomes more apparent. In this article, ***Kamal Sharma*** *explores an innovative solution inspired by game theory principles: a personalised income tax linked to Environmental, Social, and Governance (ESG) ratings.*

Climate change is fueled by human activities, including greenhouse gas emissions, and bears huge economic implications. If we don't act, the World Bank predicts that over 100 million people could fall into poverty by 2030. Inaction will lead to immense costs: estimates place potential annual global economic losses due to climate change in the trillions by the end of the century. On the flip side, combating climate change can offer significant economic benefits. According to the International Renewable Energy Agency, every dollar invested in renewable energy can yield up to three dollars in economic gains. Therefore, transitioning to a low-carbon economy not only mitigates climate risks, but it also catalyses innovation, job creation, and economic resilience. Addressing climate change isn't just about the environment—it's also a smart economic move that we need to prioritise.

Free Rider Dilemma

In the battle against climate change, one of the most daunting adversaries we face is the Free Rider Problem. Imagine a game where everyone can use a shared pool of resources, but most players are free riders. They enjoy the benefits of everyone's work without contributing their fair share. Free riding is pervasive. We live in a time where many people and companies prioritise short-term gains over long-term environmental sustainability. The result? A dilemma where the pursuit of individual interests undermines the common good and exacerbates the impacts of climate change. For example, when a significant portion of the population fails to invest in mitigation efforts or to comply with regulations, it reduces overall progress and amplifies the negative consequences of climate change. Furthermore, inadequate resource allocation and slowed transition to sustainable practices prolong our reliance on fossil fuels, increasing economic costs and environmental damage. To address this, Karl-Göran Mäler's proposition of payment for public goods offers a promising solution, setting the stage for an innovative approach rooted in Game Theory.

Game Theory to the Rescue

One strategy lies in employing direct incentives to motivate individuals towards collective environmental goals, effectively merging personal-development with broader societal well-being. This ingenious application of Game Theory not only allows for a deeper understanding of group dynamics but also serves as a potent tool in mitigating climate risks by instilling awareness and fostering motives for self-improvement. By incentivising sustainable practices and innovation, individuals are encouraged to adopt behaviours that reduce greenhouse gas emissions and contribute to combating climate change. Moreover, these programs raise awareness about environmental issues and promote community engagement, creating a ripple effect of positive actions towards a more sustainable future.

The Current State of Play

Countries like India have already introduced 'Carbon Trading Schemes' to collect taxes from environmentally-unfriendly sources. Simultaneously, they have proposed schemes like the Production Linked Incentive (PLI) to enhance domestic manufacturing capabilities in industries such as automobiles, including electric and hydrogen fuel cell vehicles. Developed nations, like the United States, have pursued alternative strategies. For example, the Inflation Reduction Act includes $369 billion in climate- and energy-related provisions aimed at stimulating and accelerating the adoption of renewable energy and the domestic manufacture of energy technologies.

Despite the promise of these policies, it's important to acknowledge their limitations. Primarily, these initiatives rely heavily on government intervention to drive macroeconomic growth. This can encounter significant free-riding problems. Hence, economies could consider directly incentivising individuals instead of solely allocating funds to markets. This approach would not only encourage personal responsibility but also foster

a more inclusive and participatory approach to tackling climate change.

The ESG Tax Gambit

On this basis, an ESG-based income tax by governments emerges as a strategic intervention. Current data reveals that large corporations typically allocate only a small amount, approximately $100,000 annually, towards ESG-rating coverage, signalling significant underinvestment in accountability. The introduction of an ESG-based income tax would directly target individuals within the firm rather than the firm itself. The tax rate on personal income would be linked to individual ESG brackets aligning with the ratings of their employers. The Leaf Effect shows tax brackets, like leaf colours, matching individual ESG ratings of employers, reflecting unequal contributions to sustainability. Just as varied leaf hues help plants grow, these brackets show how people can contribute to a greener economy, with higher ratings leading to lower tax burdens.

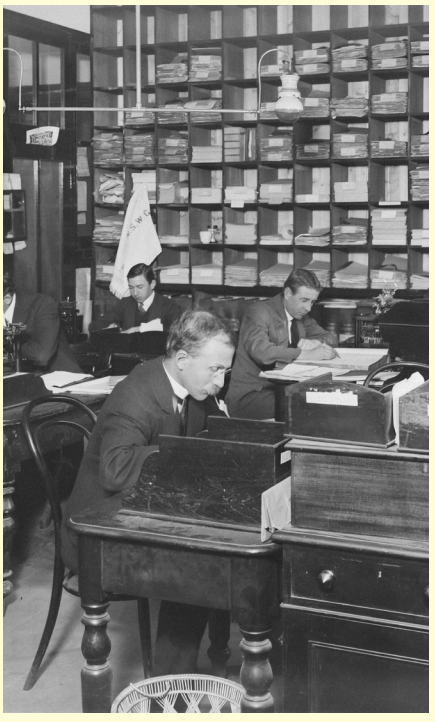
Consider an example: if an individual works at Company X with an ESG rating of 3, and another individual works at Company Y with an ESG rating of 4, the income tax bracket for employees of Company Y would be more favourable than those of Company X. Consequently, the government could impose relatively higher taxes on employees of Company X, incentivising them to advocate for sustainability within their workplace and improve their ESG rating through investments in sustainable projects. This approach creates a workforce incentive structure geared towards linking environmental stewardship with lower tax liabilities, thereby aligning with the principles of Adam Smith. Namely, targeting the building blocks within industries rather than the industry itself. This would support an effective invisible hand in free markets.

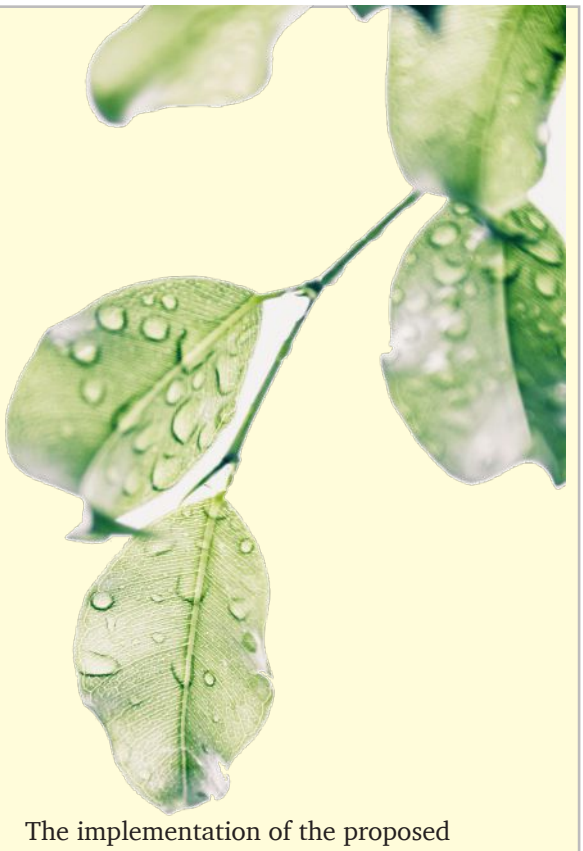
Potential Pitfalls

While the proposed ESG-based income tax presents a promising avenue for incentivising sustainable behaviour, it is essential to acknowledge and address its potential limitations. One concern is the possibility that firms may respond to the tax burden by increasing employee salaries, effectively neutralising the positive incentives. This could lead to a situation where individuals become indifferent to sustainability considerations, undermining the intended goals of the policy. Furthermore, there is a risk that the policy may inadvertently exacerbate income inequality and social disparities by favouring employees of more sustainable firms over those in sectors with lower ESG ratings, such as chemical factories.

Despite these challenges, there are potential mitigating factors we should consider. Firstly, while firms can offset tax burdens by increasing salaries, they can also invest in environmental policies to improve their ESG ratings. This dual approach could lead to tangible improvements in sustainability practices, benefitting both the environment and society. Additionally, an increase of salaries within certain sectors could create a herding effect, attracting a greater pool of candidates and eventually leading to market-driven adjustments in wages. In the long run, this could foster a more equitable distribution of income while incentivising individuals to prioritise environmental considerations in their career choices.

A Dual Opportunity: Aligning for Impact





The implementation of the proposed policy presents a twofold opportunity for both tax administration and environmental sustainability. Firstly, by adopting a personal ESG-based income tax system, the government gains access to comprehensive data on taxpayers' employment and their associated companies' ESG ratings. This data-driven approach enhances tax administration efficiency, enabling more accurate assessments of individuals' tax liabilities while also minimising instances of tax evasion and corruption. The increased transparency and accountability contribute to a fairer system, ensuring equitable contributions towards public services and infrastructure. On the environmental front, the policy motivates companies to improve their ESG ratings by investing in sustainability initiatives and green technologies. This creates a positive spillover effect, where tax incentives drive environmentally friendly practices, leading to reductions in carbon footprints and environmental degradation.

In conclusion, investments in renewable energy, waste reduction, and energy efficiency offer dual benefits. Not only do they protect the environment, but they also stimulate economic growth and job creation, particularly in the sustainable sectors. By aligning personal financial incentives with environmental objectives, the proposed policy accelerates the transition towards a low-carbon economy while simultaneously enhancing tax revenue and compliance.

A New, *Green* Economics?

(Moving) Beyond Growth: Achieving the Keynesian Dream

In the midst of a Climate Catastrophe, a radical rewriting of Economic development is becoming increasingly apparent. In this article, ***Taylor Cameron*** *serves to shake Economics of its Growth obsession, steering towards a more just and sustainable path.*

The Keynesian Dream

Acclaimed Economist John Maynard Keynes was optimistic about the future ahead of him and believed that, by 2030, we would have done without the economic problem – of satisfying unlimited wants – with a society based on leisure. As huge social and ecological issues loom over our heads, we are far from the utopia Keynes had dreamed of. Even the founding fathers of Economics prophesied that economic growth would stagnate and then society would flourish. This seems shocking in a time where we are addicted to the idea of growth, thinking that society would collapse without it.

Gross Domestic Product (GDP) is a concept at the heart of macroeconomics and government policy, with nations focused on sustaining GDP growth. The higher the GDP, the stronger the economy, and thus the more benefits society can reap as a whole. In 1974, economist Wilfred Beckerman succinctly echoed this mantra: "If growth were to be abandoned as an objective of policy, democracy too would have to be abandoned… ". This narrative is pervasive throughout our culture and society, reproduced through the media, public institutions and any economic education.

A Growing Movement

The curriculum that is training our future economists is often ignorant of sustainability, far incompatible with our contemporary society facing issues of climate change. This is a key principle of Kate Raworth's 'Doughnut Economics' which puts forth an economical framework for a "just space" between the constraints of ecological overshoot and social shortfall. Over time, demand for 'Green Growth' has spread, encapsulating both the benefits of growth and sustainability.

By 2012, the Green Growth movement held significance with multinational organisations infusing their missions with its message. For developing countries like Panama, the World Bank recently invested $150 million towards developing sustainable growth in the country. The theoretical foundations of Green Growth are founded on the idea that ecological harms dissipate as GDP rises over time. If you were to travel back in time to the 2010's, you wouldn't be radical to assume that we were progressing in this direction. We were doing quite well then – with GDP advancing internationally while environmental degradation was waning – yet to fall for this would be to speak too soon.

It's Getting Hot in Here...

Now, 2023 has shown to be the hottest year in recorded history, following a decade characterised by the ten warmest years since pre-industrial times – all the while, emissions continue to rise. This is with a backdrop of failing ecological policies working at a snail's pace. The UK government has goals to cut emissions by over two-thirds by 2030, but is significantly falling behind its targets.

Climate organisation Friends of the Earth have noted their failure:

> **"The fact remains that you can't approve new fossil fuel projects, max out North Sea oil and gas, and roll back vital green policies while staying committed to our climate targets"**

Even the Labour Party, leading in the polls, have U-turned on their £28 billion pledge for a green economy. All of this is taking place while the stakes are rising day-by-day. Leading climate scientists are already predicting that 2024 will be the year to break the 1.5 degree celsius threshold set about by the 2016 Paris Agreement.

A Wellbeing Economy

The best case scenario brought by climate economists shows that we need a growth rate of 0.45% or less if we want to avoid surpassing a further 2 degree celsius, perfectly illustrating how exponential growth is unfeasible if we are seeking to decouple from emissions. The Wellbeing Economy Alliance echoes exactly this. They work to shift the focus away from GDP and towards other aspects of welfare, such as tackling inequality, poverty and the climate catastrophe. This is a coalition made up of the strongest activists for a sustainable future internationally; those like Scotland, Finland, Canada, and a myriad of non-profit organisations. In Scotland, these commitments work: renewables make up nearly 60% of energy consumption, compared to 42% of the UK as a whole. Air pollution has significantly decreased, while greater public transport accessibility has incentivised more sustainable means of travel. For Finland, an 'Economy of Wellbeing' is at the centre of their policies, with a plan for a socially, economically and ecologically sustainable society by 2030. This follows the Doughnut Economics model's calls for '*growth agnosticity*', prioritising a regenerative, sustainable and fair economy, whether there is economic growth or not.

These countries are shaking the constraints of a growth-obsessed Economics. Moving forward, shifting our focus away from GDP growth and radically uprooting our economic goals may be the answer if we truly want to divert this ever-nearing climate catastrophe. Perhaps then, are we one step closer to achieving that Keynesian Dream.

'Aristotle and Hardin Did Not Go to War' War, Tragedy of the Commons and Recapturing What's Ours - The Environment.

*In this article, **Emir Aziz** considers whether we can recapture environmental stewardship from the clutches of selfish interests and the powerful few.*

The threads of ownership and communal stewardship have long woven a narrative fraught with debate and consequence. From intellectual fencing duels through the corridors of the Platonic Academy to the ecological insights of modern America, the discourse on ownership resonates with profound implications for both economics and the environment. As far-fetched as it may be, the guidelines to overcome the current environmental crisis can potentially be found in these historical debates—how they were framed and, most importantly, what they missed.

The Story of Two Thinkers

The Classical Period in Greece saw Plato and Aristotle have their intellectual back-and-forth on communal ownership. Plato, in Book Five of the Republic, envisioned a society where everyone would work for the common good rather than for individual gain which Aristotle, his greatest pupil, found impractical. Aristotle observed that when resources are held in common, they receive less attention and care from individuals than assets considered personal property. This sentiment reflects a fundamental aspect of human nature: the tendency to prioritise personal interests over the publics.

"Love will be watery...How much better it is to be a real cousin of somebody than a son after Plato's fashion!"

as Aristotle strikingly criticised his teacher.

In fairness, Aristotle's cynical observation was crafted to point out the importance of maintaining the best interests of the Greek city-state. Aristotle's critique foreshadows what is commonly recognised now as the Principal-Agent Theory. This underscores the divergence in incentives between individuals and the collective – implying that communal ownership might stimulate neglect and inefficiency when an agent acts contrary to the best interests of the people. Plato and Aristotle grappled with the budding complexities of societal organisation during its formation, and so strived to reconcile individual freedom with communal responsibility within the context of the polis.

The Tragedy of The Commons

The 20th century saw American microbiologist, Garett Hardin, build upon this philosophical discourse while applying it to contemporary environmental issues, which at the time came about from his observation of overgrazing in common pasturelands and depleting fish stocks in open-access fisheries. This led to Hardin's renowned theory of the Tragedy of the Commons formulated in his influential essay published in 1968. Hardin argues that when resources are held in common and accessible to all without restriction, individuals have little incentive to conserve or manage them responsibly. Instead, they are inclined to exploit the resources for their benefit resulting in depletion. In short, Hardin argues the inevitability of doom for common land and other resources due to excessive use and selfish motivations.

Great Minds Think (or Miss) Alike?

Hardin and Aristotle shared a similar scepticism towards communal ownership despite being separated by eras. Both of them portrayed a considerably pessimistic view of human behaviour. Their narratives, however, overlook the transformative potential of collective action. Neither fully embraced an encompassing view of the environment and the commons. Both also often failed to address the power of leaders in the context of warfare. However, it must be said that tying the complexities of wars entirely to issues of ownership overlooks the broader context of conflicts. This oversight or observational bias risks resembling a neoclassical economist focusing on what is easily observable rather than addressing deeper underlying issues. Wars can potentially stem from various socio-political motivations such as the pursuit of justice or overthrowing oppressive regimes. Understanding the difficult nature of wars helps in addressing the environmental and humanitarian consequences that come with them. Thus, while consideration of ownership and consumption of resources are instrumental, this pales in comparison to warfare's environmental and social impacts.

The Case of the Powerful Few

World and industry leaders have often sidestepped accountability for environmental degradation by scapegoating the public. This narrative echoes the arguments set forth by Aristotle and Hardin which serve as justification for their neglect of environmental concerns in their discourses. An illustrious philosopher from Duke University, Walter Sinnott-Armstrong, in 2005, reflected upon the idea of whether a Sunday afternoon joyride in his "gas-guzzling" SUV makes him a culprit of global warming. His question of whether an individual's emissions in the face of the climate crisis are of any actual significance is still voiced by many today. More critically, the query brings to light the disproportionate responsibility placed on individuals compared to large multinational corporations and governments who systematically fuel the climate crisis.

Taken Out the History Books

The powerful few have undeniably put the environment in jeopardy. From meddling in unnecessary wars to shaking hands with industries that spill blood for wealth. Their actions often result in severe environmental externalities where the environmental costs of their decisions are borne by society rather than by the decision-makers themselves. The war-torn landscapes of Palestine, Iraq, Ukraine, and many more, cast a long shadow upon our environmental stewardship. Baghdad's leftover concrete walls that stretch out roughly equivalent to the distance from Paris to London, serve as grim monuments to the carbon emissions of unnecessary urban warfare. Moreover, the recent war in Ukraine has also caused the country to emit as much carbon emissions (only in the military) as Belgium. Direct GHG emissions from the Russo-Ukraine war reached nearly 37 million tonnes of CO2 emissions. The fuel consumption and forest fires caused by frontline troops were the major contributors to these emissions. Redirected military travel, projected to emit 18 million tonnes of CO2 equivalent in emissions, makes a dangerous addition to these statistics.

The registers of history shy away from rekindling tales of tactical environmental destruction. The rivers of China ran red with the consequences of warfare with Japan in 1937-1945. The forests of Liberia fuelled the flames of conflict with the timber of discord. Even from a "war-recovery" standpoint, war-stricken cities would require a colossal effort to rebuild. The city of Gaza, for instance, is estimated to release 5.8 million tonnes of carbon emissions from rebuilding materials and activities. This setback is upsetting knowing that before the destruction, Gaza possessed one of the world's highest densities of solar rooftop installations. This setback shows that even in the modern era, wars continue to unleash a cascade of destruction that magnifies far beyond the battlefield.

The Economic Ripples of Conflict

Wars with their far-reaching and poisonous effects often inflict profound economic consequences that amplify throughout society and further affect livelihoods and fiscal stability. This is prevalent in regions like Syria and Yemen, where infrastructure is destroyed and human capital is depleted. These conflicts not only exacerbate poverty and inequality but also hinder economic development. Environmental and economic dimensions go hand-in-hand in terms of structuring dialogues and policies that are innovative, sustainable and of peaceful nature in a world facing climate emergency.

Gorillas Over Guerillas

Despite the dangers and tragic "wipeout" that wars have caused throughout the ages, there are glimmers of hope. Conservation efforts in conflict zones offer a beacon of resilience through their demonstration of the transformative power of collective action in safeguarding our environmental heritage. In the heart of DR Congo, conservation initiatives converge with peacebuilding efforts to forge a path towards ecological harmony. Conservationists in the Virunga region work tirelessly to protect the endangered mountain gorilla that stands as a symbol of resilience in the face of adversity. These efforts not only safeguard biodiversity but also promote a blueprint for economic development and social cohesion in war-torn regions.

What's Next?

There exists no singular solution to reinvent the "wheel" of environmental stewardship, although improving current designs of how we approach the environment is essential in this era of climate emergency. The philosophical musings of great Greek thinkers and the contemporary insights of Hardin have provided reliable guidelines for managing the complexities surrounding communal responsibility and resource management. However, as we navigate the challenges of environmental degradation and geopolitical conflict, it becomes clear that recapturing our sense of ownership towards the environment is one of many key ingredients for forging a sustainable and peaceful future. Embracing diverse perspectives, practising collective action, and holding those in power accountable for their actions, are critical in paving the way for these improved designs. Most importantly, in this pursuit lies the promise of a future where the Tragedy of The Commons is transformed into the triumph of collective stewardship.

Debt, Tarrifs and Taxes: Fighting Climate Inequality

Winner of the Insight Prize

Time to pay up!

The Uneven Geography of the Climate Crisis

The Global North has grown rich off their climate emissions while the Global South has been left to foot the bill. In this article, ***Michelle Yu*** *exposes the unequal impact of climate change and why it is time for the Global North to settle its debt.*

In 2022, Pakistan was hit by a devastating period of intense rainfall. It destroyed 4.4 million acres of farmland, killed 800,000 livestock, and affected the lives of almost 33 million people. The rainfall cost the country nearly $30bn in economic losses and left serious scars. Today, nearly 15 million Pakistanis are suffering from severe hunger. Sadly, this was not some freak storm – the climate crisis is clearly upon us and its wrath is disproportionate. Pakistan suffers catastrophically even though it accounts for just 1% of annual greenhouse gas emissions. Similar stories are easily found. The Global North drafts the world's poorest (and, often, least-polluting) countries for combat on the frontlines of its war against climate change. This inequality has not gone unnoticed for too long, formalised by the concept of climate debt.

Climate debt can be split into two categories: emissions debt and adaptation debt. Emissions debt describes the disproportionate cumulative emissions between the Global North and South. It has accumulated since the Industrial Revolution when powerhouses like the US and the UK emerged through thick plumes of carbon dioxide. These historic emissions still contribute to climate change and, despite their emissions beginning to fall, emissions per capita in high-income countries remain over 30 times greater than that of low-income countries. In fact, just a handful of developed countries are responsible for 70% of emissions from the 1850s to present. If that is the development path the Global North has set out, developing countries clearly cannot follow suit. Consequently, the developing world is handed an incredibly difficult task: developing while limiting emissions and while battling the disproportionate effects of climate change. This idea is foundational to adaptation debt – it is the idea that rich countries owe developing countries for the hardships caused by their excessive emissions.

While it is hard to gauge the exact value of adaptation debt, IMF estimates lie in the trillions. One key contributor is agriculture. Agriculture accounts for nearly two-thirds of jobs in the Global South, increasing economic exposure to climate disaster. Vulnerable nations often lack the crucial infrastructure and institutions needed to combat increasingly frequent climate change-driven natural disasters, disease outbreaks and insect epidemics. Due to their high exposure and limited ability to combat climate disasters, such events can cause billions of dollars in upfront damages and intergenerationally scar the economy.

Climate change's disproportionate wrath harms education and infrastructure in the developing world. Human capital investments have long been known to be a necessary step in economic development. However, every year, thousands of schools in the Global South are destroyed by extreme weather events and are never rebuilt due to a lack of resources. Consequently, millions of children drop out of primary school, join the workforce, and never return to school, perpetuating cycles of poverty and seriously inhibiting some countries' development. Quality infrastructure is also very important – good roads, energy systems and broadband networks are vital to a functioning supply chain and economy. However, climate change makes this necessary infrastructure more expensive to maintain. For example, in Bangladesh, a well-built road used to last at least 10 years. Now, because of intense rainfall, most roads are in ruins after just 1-2 years and rebuilding them is costly. These repairs also cause losses via productivity disruptions, dragging down the GDP by billions.

While sustainable development in the Global South is a stark challenge, it is not impossible. Plenty of countries have made rapid progress. Notably, in Vietnam, renewable energy is cheaper than fossil fuels. Additionally, much of the Global South has easy access to renewable energy like wind, sun and geothermal. Thus, with the right planning and financing, these countries could skip the era of fossil fuel dependency. Fostering clean energy growth and paying their debts is the direction developed countries must move towards. In recent years, they have begun repayment via climate finance. At COP15, they agreed to mobilise $100bn a year by 2020 to help mitigate the effects of climate change in developing countries, and they established the Loss and Damage Fund at COP27. Both funds stab at the heart of adaptation debt. However, their narrow focus on addressing climate costs, the exclusion of green development funds, and the non-binding nature of agreements all disappoint. Additionally, global commitment has been shoddy. The $100bn target was only met in 2022, and so far, just $700mn has been pledged towards the L&D Fund. Compare this to the $7tn spent worldwide on fossil fuel subsidies in 2022 and it becomes clear governments can do more. Indeed, they must do more to settle the debt: for the planet, for the future, and for justice.

Climate Protectionism: Justifiable Means to Save the Planet or Another Source of Global Inequality?

In the pages of this article, ***Gabriel Pais Gaspar*** *explains how liberalising trade policies helps foster global cooperation for better climate solutions.*

'Is this how our story is due to end – a tale of the smartest species doomed by that all too human characteristic of failing to see the bigger picture in pursuit of short-term goals?'

remarked internationally beloved British broadcaster and biologist David Attenborough at the 2021 COP26.

Today, politicians appear to have heeded Attenborough's plea for climate protection but forgotten his warnings against short-termism. Politicians such as Labour's Sir Keir Starmer are determined to 'Win the Green Transition', forgetting that a successful transition is one done in unison with the global community - not in competition. This type of thinking is not isolated to Britain. Despite Western leaders' good intentions, recent protectionist policy choices, which are designed to protect against climate risk, arguably erode the achievements of economic liberalisation and (ironically) worsen the climate crisis.

The Briefest History of Protectionism

Protectionism utilises government mechanisms to protect domestic industry from foreign competition. This is often achieved by subsidising domestic production at an immense cost to the taxpayer or limiting the quantity of imports through tariffs and quotas. The damage of these policies is most clearly seen in the Smoots-Hawley Tariff Act (1930) which plunged the United States and most of the world into isolationary economic policy. Both John Maynard Keynes and Charles Kindelberger condemned above-20% increases in global tariffs as a leading factor in the severity of the Great Depression, enabling the rise of fascist leaders internationally. Once considered extinguished by the Bretton Woods-era institutions, today protectionism is returning with a vengeance.

The Return of Environmentalist Protectionism?

The 1930s saw xenophobia and a perceived need for self-reliance and Autarky push for economic protectionism. However, it is in the 21st century that protectionism has become politically justified by the concerns of climate change and national deindustrialisation. Both the US and EU are aggressively pushing "green new deals" to curb emissions and support the de-industrialised communities left behind during globalisation. The Biden administration's Inflation Reduction Act (2022) directs trillions of dollars to these communities through green investments.

However, these come at the cost of threatening the stability of government finances as well as encouraging inefficiency and isolationism within the global economic system. Many in the EU see the fiscal splurge on tax credits and subsidies as harming the trade prospects of European producers. Germany, Europe's industrial giant, has responded to the Biden administration's policies by putting the European single market in increasing risk by distorting competition. This is seen with the dramatic increase in subsidies (50% of which come from Germany alone) within the single market, albeit with significant opposition from other European leaders. This distrust is also seen in the developing world which has been critical of the EU Carbon Border Adjustment Mechanisms (CBAM) and the growing presence of climate concerns within free-trade agreements. The Brazilian president, Lula de Silva, has routinely accused the EU of Protectionism in its attempts to tie Amazon rainforest conservation efforts to trade negotiations. European concerns about producer competitiveness have resulted in the stagnation of the EU-MERCOSUR deal, the latter being a South American trade bloc. Despite taking twenty years to negotiate, it has yet to be approved by members of the single market resulting in a disconnect within the international trade system.

The CBAM's protectionist nature has also received significant international outrage despite its green intentions. The scheme is intended to support European industry within heavily polluting sectors such as steel, chemicals or electricity, and aims to offset the difference between European (and British) carbon prices with the rest of the world. In theory, this scheme should limit the extent of Carbon leakage within European economies, supposedly leading the regulatory path to a greener global economy. However, this has also supported struggling European industries under pressure from highly competitive manufacturers in Asia and the US.

This new form of industrial protectionism is not just a threat within the West - economists and politicians have been criticising China for these policies for decades. Pre-existing technological protectionism, in the form of patents, has the global community divided. The short-term goal of maximising domestic benefits within a global carbon transition threatens our

shared long-term goal of salvaging the planet from climate destruction and risks fracturing trade relations

Intellectual Protectionism

"Patents", despite being an arguably stronger form of intellectual property rights, are often overshadowed by its more popular counterparts of trademarks and copyrights. Nevertheless, its impact on the fight against climate change is incredible.

The modern patent system, with roots in ancient Athens and Venice, was born in England with the 1624 Statute of Monopolies. It gave inventors a market monopoly on their inventions. Patents became more apparent during the 1970s when US policymakers expanded their legislation, aiming to encourage private investment and innovation as entrepreneurs were assured that their inventions were protected. Today, a patent offers innovators a twenty-year global monopoly on the use of their inventions.
Patent legislation became a hot topic across international headlines during the COVID-19 pandemic. This was primarily due to pharmaceutical companies such as AstraZeneca and Pfizer utilising their patent monopoly power to charge firms however much they wanted for the use of their vaccine formulas. This understandably received significant criticism as developing countries were unable to meet high vaccination costs and rates. Many economists argue that a more lenient patent system would have enabled greater domestic production within the developing world, saving thousands of lives and preventing the spread of the pandemic more quickly. What relevance does this have to the climate emergency?

The green transition needs similar collective action across countries. However, high-tech innovations moving towards decarbonising the atmosphere and providing clean energy are protected by patents. This will likely mimic a similar global divide in addressing the climate emergency. Famously, Ban Ki-moon argued that 'climate change does not respect borders'. To truly solve this global emergency these technologies should be shared freely. Consider that patents, which isolate innovation and progress, are not even used in 40-90% of cases. Continuing this form of intellectual protectionism will exasperate global inequalities and place an unnecessary strain on those fighting on the frontlines of the climate crisis. Reforming the system to encourage the shared use of these technologies will not only help alleviate global economic inequalities, but also encourage greater innovation.

Yes, In My BackYard Environmentalism

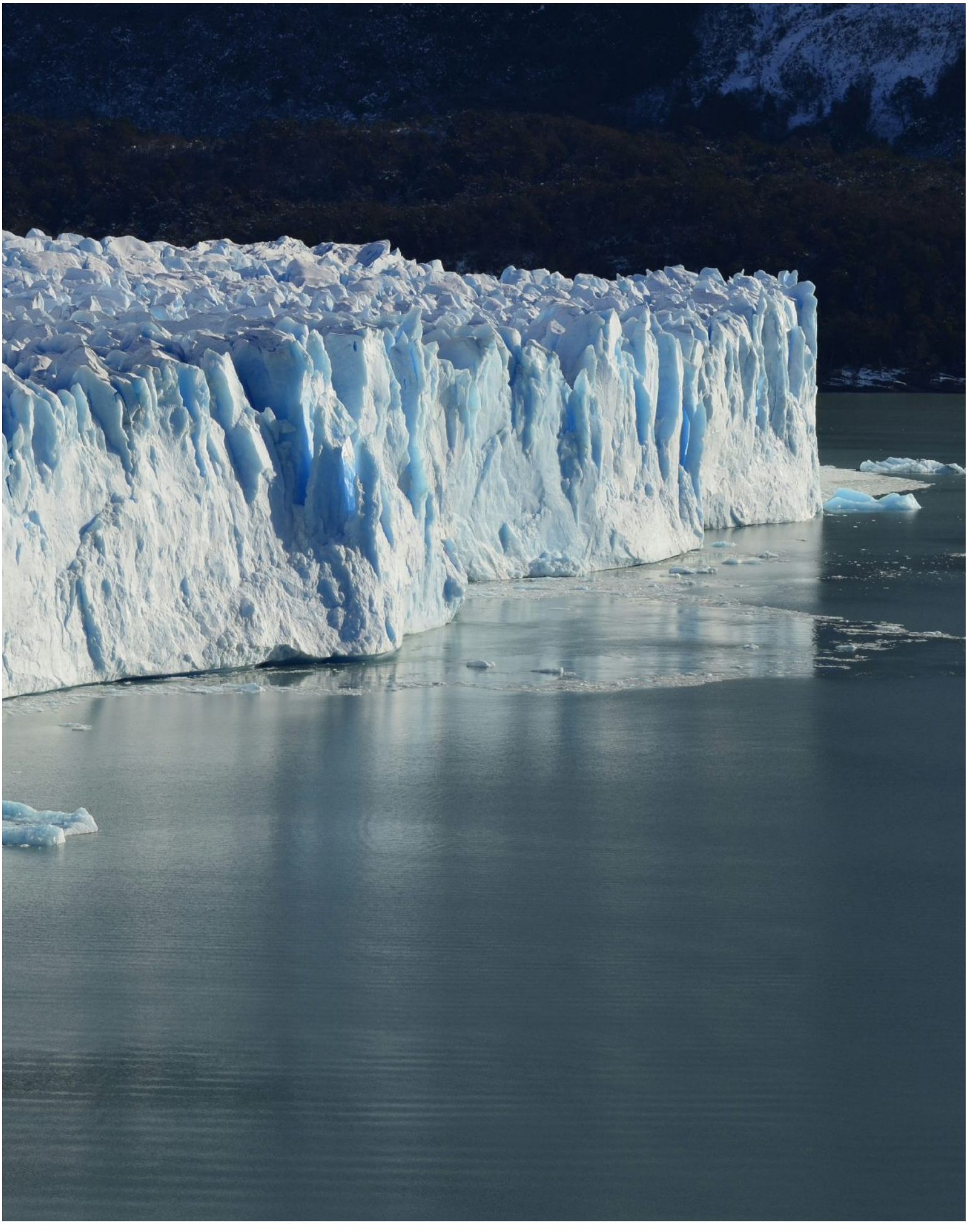
Striking a balance between protectionism and globalised policy to meet the challenges created by climate change is undoubtedly a challenge. Despite this, there are solutions, particularly within the West, which could aid the fight against climate change and damper protectionism.

One policy platform gaining traction in the UK is the YIMBY ('Yes In My BackYard') movement that focuses on deregulation planning restrictions. Not only is this a cheaper alternative to subsidising domestic industry (which the UK is struggling to keep up with), but it facilitates the development of the UK's ageing and strained electricity network.

It would take 12-14 years to build the infrastructure necessary to transfer all sectors from carbon-intensive fuels to electricity, though it is an obvious way to decarbonise and grow the British economy. The lack of infrastructure has resulted in Scotland producing an excess amount of electricity (15GW) from its wind farms, however there is only capacity to bring 7GW across the border to England.

Protecting The Planet

The recent trend towards protectionism among policymakers is unlikely to be the most efficient or progressive strategy to approach the climate emergency. Global cooperation is the most ideal solution. Regardless, for nations such as the UK, improving competitiveness at home through deregulation is a more effective green industrial policy than protectionism compared to the EU, US or Chinese which have extensive state spending. This serves as a warning to policymakers that the current global trend towards protectionism is likely to destroy liberalisation, which the global economy thrives on, as well as worsen the climate emergency we all face.



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