



DecarboN8

Place-based decarbonisation for transport

CarbonFreeports: Freeports as opportunities, not threats, for place-based decarbonisation. Final report.

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Executive summary

UK Government strategy on Levelling Up seeks to stimulate economic development in coastal, rural and peri-urban regions, including the former industrial towns and cities of the North of England. Under former Chancellor Rishi Sunak, the Freeport strategy was one key element of this regeneration strategy. Freeports are special economic zones that provide a range of tax and customs benefits within a geographically bounded region. The aim of the Freeport is to stimulate economic growth by reducing the economic friction created by customs and tax systems resulting from the UK's exit from the European Union. Moreover, Freeport sites are intended as innovation hubs to spur regional development in (among other industries) low carbon technologies.

This project explores the concept of CarbonFreeports – examining policy alignment between the Freeports strategy and UK Government commitments to low carbon investment towards Net Zero goals. CarbonFreeports provide a platform from which to explore the role of Freeports in stimulating low carbon forms of mobility, and innovation in transport infrastructure development, planning and practice, and examining the socio-economic and environmental justice implications of current Freeport investment.

Using a qualitative empirical research approach, we conducted semi-structured interviews with key regional stakeholders in Teesside and Liverpool City Region Freeport plans and held workshops and webinars for further exploration and development of CarbonFreeport futures.

Key policy findings include:

1. ***Freeport development has had little impact upon regional transportation infrastructure networks*** into and out of site boundaries given the overlapping governance scales of national, regional and local public transport planning, electric vehicle charging, rail, road and shipping freight networks. There is a strong risk of carbon-intensive 'lock-in' within freight and commuting networks to and from Freeport sites.
2. **Freeports can potentially assist low carbon innovation through economic agglomeration** - the clustering of net-zero industrial innovation at specific sites. Previous special economic zones have turned to lower value economic activities (e.g., call centres), Freeports must retain a positive and ambitious strategy to promote good quality jobs in net zero industries. There is a need for strong connections with local skills planning and initiatives to ensure that local communities can take advantage of new jobs in established and emerging low-carbon industries.
3. **Transparency and good governance require stronger engagement across different scales of government** – many local politicians feel under-informed about the Freeport strategy and disengaged from its development.
4. **Broader stakeholder engagement with communities beyond just businesses and local authorities is necessary** to ensure environmental justice in site planning. Wider engagement with a range of stakeholders has the potential to substantively improve

decision-making, enhance legitimacy and credibility, and contribute to a more just transition to net zero and economic regeneration.

5. **Freeport policy risks creating a cycle of hype leading to disappointment and political abandonment in the future.** However, it does present a focal point for cross-sectoral co-ordination to develop a systemic vision for local and regional economic regeneration and just transitions, with scope to align market responses to strategies for international trade and low-carbon innovation.
6. **“Levelling up” must acknowledge different geographic and governance scales** – the Freeports will benefit certain geographies (such as affluent neighborhoods from which high value jobs/high skilled workers are drawn) whereas others, such as residents living near to ports and freight networks, bear the risks and burdens through air pollution, traffic noise and light pollution. Exploring how this distributive environmental injustice can be addressed is an essential part of a fair CarbonFreeport strategy.
7. **Turbulent changes within the leadership of the Conservative Party culminating in the appointment of PM Rishi Sunak, have led to the expansion and scaling up of Freeport sites across the UK,** including new announcements for Scotland and Wales. This expansion will likely increase the geographic spread of environmental injustice if low tax-low regulation economic development becomes the norm across the UK.

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Introduction

Conservative gains in the 2019 general election created a mandate for former Prime Minister Boris Johnson to enact two core policy agendas. The first was to leave the EU – to ‘get Brexit done’. The second was to introduce policies intended to resolve the challenge of regional economic disparities between London and the greater southeast, and other regions, particularly so-called ‘left behind’ places. This agenda is articulated as ‘levelling up’ and while notable in scope for placing regional spatial inequalities at the heart of political debates, government claims have been criticised for their lack of clarity, specificity and targeted resourcing [1]. Moreover, enabling economic growth, ensuring a just transition to a zero-carbon green economy and securing the ‘red wall’ of former Labour-voting constituencies after EU-exit were complicated by the challenges of economic shut-down during the Covid-19 pandemic, the inflationary pressures of cost-Covid recovery and ongoing crisis stemming from Russian invasion of Ukraine. The subsequent cost of living crisis stemming from inflationary pressures on food and fuel prices, is likely to reinforce existing socio-spatial inequalities - effectively deepening regional economic disparities.

Government strategy on levelling up has sought ways to combine levelling up and a just transition through climate change-relevant economic measures – notably former UK Prime Minister Boris Johnson’s £12bn-backed 10-point plan for a ‘green industrial revolution’, that sought to leverage finance for a range of measures including: new nuclear build, carbon capture and storage, low carbon hydrogen production, offshore wind, electric vehicles infrastructure, green public transport, ‘jet zero’ and green shipping, greener buildings, protecting nature, and ensuring green finance and innovation [2]. The alignment of green growth through innovation and industrial development is the core feature of this planned economic recovery – to ‘build back better’. One the most high-profile instruments to achieve this goal is the so-called ‘Freeport’ agenda in England, and the counterpart ‘Green freeport’ in Scotland [3], and this policy programme lies at the heart of the Decarbon8-funded *CarbonFreeports* project.

Freeports

The green industrial revolution platform included policy measures outlined in the March 2021 Budget – including the announcement that eight Freeport sites were to be designated in England. The eight successful freeport site bids were: East Midlands Airport, Felixstowe & Harwich, Humber, Plymouth & South Devon, Solent, Thames, Liverpool City Region (LCR), and Teesside. It is these last two – LCR and Teesside that form the basis of this study (as discussed below). Under this specific policy, the concept of the Freeport (which we capitalise to disambiguate this specific UK policy from the more general concept of ‘freeports’ as ports with special free trade provisions) encompasses both a geographically defined region earmarked for industrial innovation and development, and a set of economic regulations, including tax and planning policy instruments bounded within those predefined regions. Freeports are, from the outset, logistical interfaces located outside the customs territory of (in

this case the UK), where the storage or processing of goods received from abroad is carried out before the goods are forwarded abroad [4]. Freeport status grants a range of economic benefits, primarily in the form of different types of tax relief, a set of simplified customs procedures, streamlined planning processes for new build within designated sites, and broader support to promote regeneration and technological innovation [5].

Since January 2021, the UK's Trade and Cooperation Agreement sets out the terms of UK trade with the European Union. As the UK has left the EU customs union, single market, and VAT area, for industries that involve just-in-time processes of manufacture across European/global supply chains, the "friction" of tariff and non-tariff barriers to the EU has negative impacts upon the economic productivity (and desirability) of certain UK businesses [6]. The economic instrument of the freeport is designed, in the first instance, to alleviate this 'friction' within supply chain management by creating a secure customs zone located at ports (or sometimes airports) where business can be carried out inside a country's land border, but where different customs rules apply. Freeports provide a range of economic incentives [primarily from 7]:

1. **Customs rules** - Businesses operating within Freeport customs sites receive tariff benefits: duty deferral while the goods remain on site, and duty inversion if the finished goods exiting the Freeport attract a lower tariff than their component parts.
2. **Stamp Duty Land Tax (SDLT) Relief** on land purchases within Freeport tax sites in England where that property is to be used for qualifying commercial activity up to 31st March 2026.
3. **Enhanced Capital Allowances (ECA)** - enhanced tax relief for companies investing in qualifying new plant and machinery assets. Firms will be able to reduce their taxable profits by the full cost of the qualifying investment in the same tax period the cost was incurred.
4. **Enhanced Structures and Buildings Allowance (SBA)** - enhanced tax relief for firms constructing or renovating structures and buildings for non-residential use within Freeport tax sites.
5. **Employment tax incentives and National Insurance Contributions (NICs) rate relief** – employers pay 0% employer NICs on the salaries of any new employee working in the Freeport tax site, applicable for up to three years per employee on earnings up to a £25,000 per annum threshold. An employee will be deemed to be working in the Freeport tax site if they spend 60% or more of their working hours in that tax site. The relief is available for up to 9 years from April 2022, with further government review mid-way through the scheme.
6. **Business Rates Relief** - up to 100% relief from business rates on certain business premises, available to new and existing businesses in Freeport tax sites for 5 years from the point at which the beneficiary first receives relief up to September 2026. Relief is funded directly by central government.

7. **Local Retention of Business Rates** - local authorities in which the Freeport tax sites are located will retain the business rates growth for that area above an agreed baseline, in a manner consonant with that of Enterprise Zones. This retention is guaranteed for 25 years, to allow LAs greater certainty in long-term regeneration and infrastructure investment.

The Freeports policy is intended to attract both maritime transport and port logistics companies to the freeport sites, and through a regulatory differential with the EU, to attract other forms of economic activity [8]. This might include for example: 'big tech' companies, minerals, renewables manufacture, and process engineering that might not otherwise be located at port sites. Each freeport can be up to 600 hectares in size, centred around one or more air, rail, or seaport, but potentially consisting of multiple sites extending up to 45km beyond the port(s) itself to create a special economic zone.

Though defined by the economic measures to improve economic regeneration, the Freeport is described by the Department for Levelling Up, Housing and Communities as "more than a special economic zone", comprised of tax reliefs, customs, business rates retention, planning, regeneration, innovation and trade and investment support [9]. The aims of Freeport strategy are not only to develop economic growth, but also to serve social justice needs ('levelling up'), to promote international trade, and to serve as hubs for innovation and green growth. Of note, in the Government's logic model for Freeport development the top-level policy aim is for "the economies of all sub-regions in which Freeports are based see sustainable and long-term growth, become more productive and level up" [10]. The Freeport is thus a mechanism for policy convergence between post-Covid-19 growth strategy, innovation investment and action on climate change through green investment, with bids for Freeport status required to state how they would contribute to the government's net-zero targets. This project, through the CarbonFreeports framing, aimed to explore and test the *coherence* between these different pillars of Freeport strategy, with an explicit focus upon potential for transport and other forms of decarbonisation strategy within places that have suffered from structural unemployment through economic sectoral change (e.g. in LCR the decline of labour-intensive shipping, and in Teesside the decline of carbon-intensive steel production), and the associated social, political and health inequalities that continue to affect these regions.

The Carbonfreeports concept: research aims and objectives

Though post-EU exit and post-Covid-19 recovery have been key drivers of the Freeport platform, meanwhile, the UK's 6th Carbon Budget now incorporates the UK's share of international aviation and shipping GHG emissions for the first time and thus brings the UK more than three-quarters of the way to so-called net-zero carbon emissions by 2050 [11]. Without specific interventions in shaping Freeports towards low-carbon development pathways, there is a persistent risk that short term economic growth will be prioritised over net zero transition goals. Without sufficient scrutiny and forward planning, there is the risk that

Freeports as enterprise zones would simply lock-in more carbon-intensive manufacturing, shipping, and freight transport systems, and exacerbate other forms of transport-based environmental injustices (e.g., associated congestion, noise, and air pollution) in vulnerable communities of the North of England.

The *CarbonFreeports* project aim was to explore how Freeports might be reimagined from such a potential environmental threat to an environmental justice opportunity. Bringing together critical social science perspectives from *transport geography and just mobilities*, *regional development studies*, and *science and technology studies*, we assess the Freeport as a complex place-based socio-technical system. Our research focused upon an intervention in two Freeport regions in the North (Teesside and Liverpool) to build the localised capacities, agendas and fora needed to support appropriate, place-based transport and wider decarbonisation and to navigate the inescapably difficult decisions for regional planning and economic development authorities; with future work intended to scale-up recommendations to influence the broader decarbonisation of national Freeport policy.

The research **objectives** were:

1. To implement place-based analysis of Freeports, thereby opening an enduring *policy window* to incorporate and prioritise decarbonisation of regional shipping and air freight transport, regional development, and innovation hubs.
2. To co-produce with partners a policy framework and enduring forum to integrate transport decarbonisation, environmental quality, and social sustainability strategies into local Freeport development through a critical policy analysis relevant to Teesside and Liverpool.
3. To begin the work of scaling-up place-based regional *CarbonFreeport* strategy to influence national policy congruent with government economic, levelling-up and decarbonisation goals.

The research, engagement, and capacity building programme of the CarbonFreeport project is inherently place-based: rather than recruiting purely national-level stakeholders in the qualitative data collection and deliberative engagement exercises, the authors focused upon two key places – the Teesside Freeport (within the purview of the Tees Valley Combined Authority) and Liverpool Freeport (within the purview of the Liverpool City Region). The place-based approach of the CarbonFreeports project recognises the role that geographically defined and community-level social research plays in shaping deeper understanding of complex processes of industrial strategy and regeneration, by focussing upon issues of governance, leadership, new technology and regional assets [12]. The Freeport, as a project of regional transport, low-carbon shipping, and industrial innovation, could potentially lead to the decarbonisation of multiple forms of mobility. Decarbonising mobilities is complex, involving not just technological innovation, but the interplay of multiple *socio-technical dynamics* including issues of local prosperity, dynamism and deprivation, health inequalities, pollution and environmental injustice, local training, skills development, regional economic displacement, or the risks of crime or financial mismanagement. It is impossible to foresee

how these dynamics will shape the CarbonFreeports platform, without the concerted and enduring involvement of diverse local stakeholders representing all these place-based concerns within the broader policy platform. As such, this pilot project based in two key regions of Teesside and LCR, aims to kickstart that longer-term process of social evaluation and policy scrutiny.

Case study: Teesside and Liverpool City Region (LCR) Freeports

The Teesside and Liverpool City Region Freeports are urgent case studies of transport decarbonisation within the broader patterning of Freeport development across England. They are major projects of regional/international transport and energy infrastructure investment predicated upon their capacity for economic renewal. The Mayor of Tees Valley CA described a 'tsunami of jobs and investment' to 'turbocharge' the regional economy (estimated £3.4 billion economic boost and 18,000 jobs); and Liverpool foresees an initial increase of £850m and 14,000 new regional jobs through new investment. The promise of good quality job growth drives local political support for Freeports, potentially overshadowing concern for the need for transport decarbonisation. This is significant because Freeports are structured across multiple sites in both Tees Valley and Liverpool – a much larger, more dispersed geographical footprint than originally proposed (see Figures 1 and 2) – such that their very success, on economic/trade terms, would likely lead to increased traffic volumes and strengthening of transport-related environmental injustice. It is necessary, therefore, to resolve the incongruity between Freeport site designations and local sustainable transport and regional decarbonisation plans. This resolution was achieved in this project through qualitative research and multi-stakeholder dialogue to build localised capacity for transport decarbonisation of both regional freight and commuter traffic, shipping, and aviation.

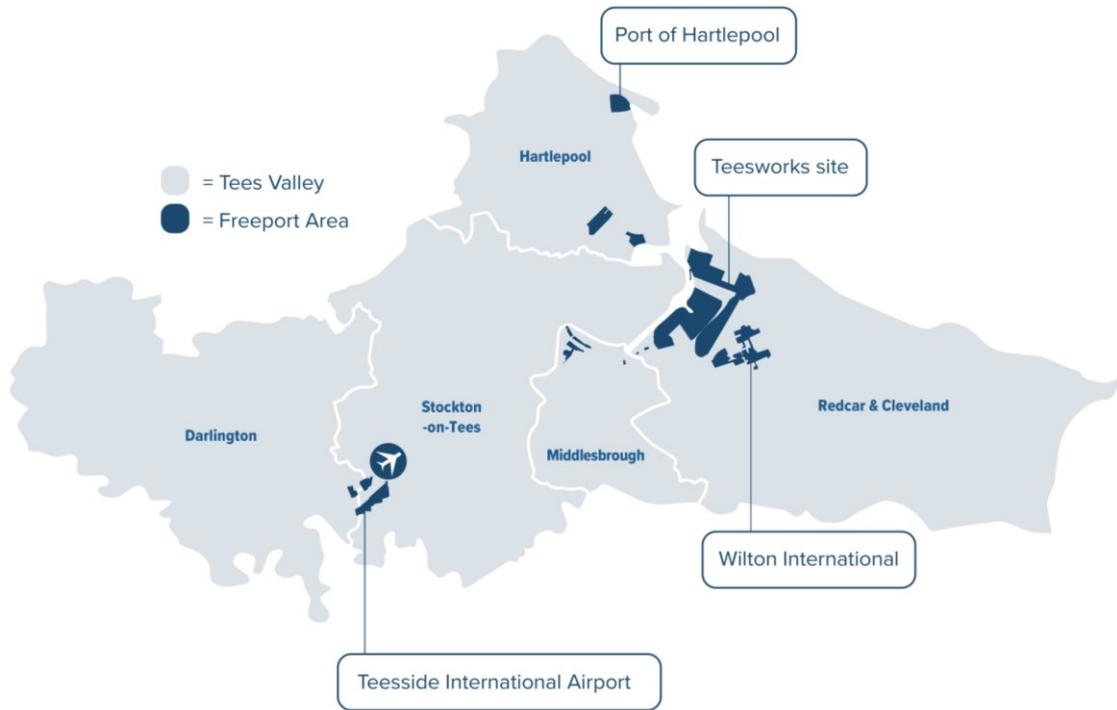


Figure 1 – Teesside Freeport area

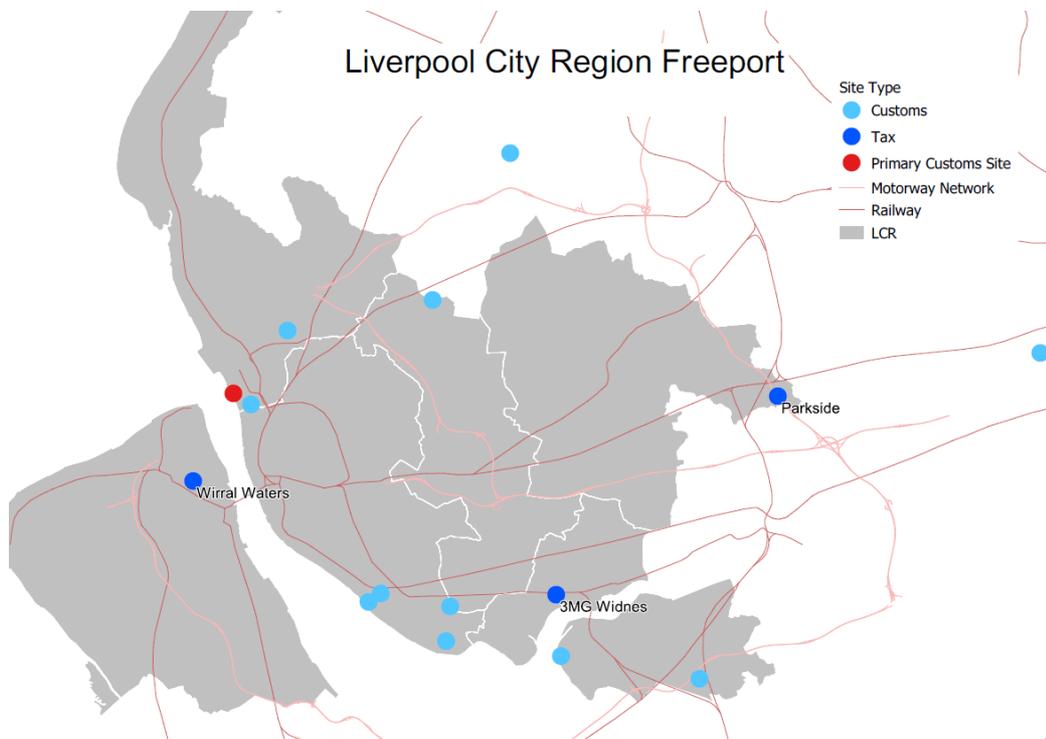


Figure 2 – Liverpool City Region Freeport area

Methods

The research employed a range of qualitative and deliberative engagement methods. Specifically, researchers interviewed key actors involved in Freeport development plans, bidding and delivery, local political actors (local authorities, councillors), environmental justice organisations and citizens groups. The interviews by sectoral affiliation are listed in Table 1.

Table 1. Interviewee basic demographics

Stakeholder sector designation (T or LCR)	Number of interviewees
Tees Valley	10 (2 women, 8 men)
Liverpool City Region	14 (5 women, 9 men)

We used a coding framework to capture relational and expressive values through a sequential process of description, interpretation, and explanation of qualitative data [13]. The coding process established a multi-level framework – from top-level thematic coding to establish the context and production processes of broader themes, followed by a more detailed examination of utterances, enabling us to draw connections between individual actor responses and a broader thematic coding framework. We present the findings here in Chatham House style presentation – in that utterances are unattributed to specific stakeholder actors to preserve anonymity and ensure data quality. Explicit focus in this report emphasises policy-relevant findings related to socio-economic regeneration, transport decarbonisation and place-based environmental justice in Teesside and the LCR Freeport regions, combined with findings from broader engagement activities including a series of local stakeholder workshops held online for LCR and Teesside actors, and a larger online webinar to promote the Carbonfreeports project. Engagement activities were organised around the principles of appreciative inquiry, an approach originally from organizational development in which participants are first asked to identify what is positive or what ‘works’ so as then to encourage a more open-ended, imaginative and strategic focus in devising courses of action to achieve positive organisational (or, here, institutional and place-based) change [14, 15].

Research and policy findings

From the qualitative analysis of interview and workshop findings we discuss four ‘top-level’ thematic categories, concerning:

1. Economic regeneration policy
2. Low carbon development opportunities
3. Just transitions and Freeport development

4. Governance challenges.

Economic regeneration policy

Reporting on the Freeport policy, whether positive [16] or critical [17], often emphasises the light-touch customs and regulatory aspects of the sites in which the Freeport is situated within the UK's geographical space but outside the core customs territory. The policy's origins lie in a report by former Chancellor Rishi Sunak at the time of the original Brexit referendum (i.e. before he was Chancellor) for the free-market policy think tank, the Centre for Policy Studies [18] which laid the groundwork for the government's subsequent proposals.

In the report Sunak drew heavily on the (largely successful) United States experience of freeports as Foreign Trade Zones (FTZ) (ibid). The UK's closest equivalent is the "enterprise zone" where clusters of companies are offered tax relief and accelerated planning permissions within the designated site, which interviewees largely deemed to be of value for localised job creation. However, though much of the media reporting and grey literature on Freeport designation focused upon the customs and regulatory structure of Freeport sites, interviews with key stakeholders revealed that these aspects were of relatively low value to businesses; most interviewees judged such measures to be of limited use to their business planning. This was in part because of the administrative burden of in effect running a customs operation under scrutiny by central government and in part because of limits of geographic and temporal scope within the proposals (limits to 600 hectares, and time limited to September 2026 for most tax incentive measures).

Interviewees recognised that Freeports are not major free-trade zones but are closer in scope to enterprise zones of the 1980s, 1990s and 2010s – geographically-defined economic development zones with associated tax incentives. (This also thus distinguishes the current policy for a previous 'freeport' policy in the UK, from the 1980s to 2010, which was much more closely aligned directly with customs benefits.) This, in turn, creates specific regional economic development challenges. If Freeports act as enterprise zones, one of the significant concerns is the impact of geographically bounded tax incentives to displacing existing economic activity, rather than new job creation, effectively 'pushing demand around the economy'. Studies of enterprise zones found that 41% of the 58,000 jobs created in enterprise zones were relocated from elsewhere. Over half of jobs on UK enterprise zones between 1981 and 1993 could be attributed to displacement and deadweight, usually from nearby high unemployment areas [19] These displacement effects may be less pronounced in the case of manufacturing jobs than with services and retail [20]. Swinney [21] notes whilst reviewing the enterprise zones of the 2010s, that at least a third of jobs created were displaced from elsewhere, with only a quarter of the number jobs created compared to Treasury estimates in 2011, and that most jobs created were low-skilled. This finding is mirrored here, as our interviewees expressed similar views:

"To be honest, this was about having the opportunity cost of not having one."

“The key thing is ensuring that there's some additionality and it's not just displacement from other investment that would have happened elsewhere anyway.”

Freeports, like enterprise zones are geographically distinct and limited, businesses are attracted to enterprise zones due to business rates relief and enhanced capital allowances, but experience in the 1990s shows that this led to higher rents, thus offsetting economic gains (the largest beneficiaries were landlords) (ibid.). We found that stakeholders expressed a range of opinions on these issues, ranging from sceptical to supportive. However, there was a general sense that the Freeport policy was:

“The game that's in town. The jury generally is still out.”

Rather than free trade zones notionally outside of 'normal' customs rules, interviewees were more likely to see a Freeport as a tool in efforts to create (low-carbon) industrial clusters – in effect, a form of economic agglomeration, with the objective of creating good quality skilled jobs.

“Freeports aren't about ports, they are about developing industrial clusters”

“...the modality is a basic requirement... it's as well as the customs and tax incentives but it is the building of an industrial cluster that you want and the point behind them, I suppose the overall arching goal... is to create a globally competitive clean technology cluster.”

Essential to this is the attraction of foreign direct investment (FDI) to maximise economic gains through global supply chain management and technology transfer. Thus (hopefully) dispelling concerns about economic displacement from other port-regions (e.g., Port of Tyne's relationship with Teesside). FDI and other forms of economic agglomeration raised hopes amongst interviewees for a “*manufacturing renaissance*” in which the economic multiplier effect from new low-tax investment in infrastructure stimulates economic renewal in the post-industrial regions of Teesside and LCR as the UK finds itself increasingly competitive, for the first time in decades, in such sectors – due to broader shifts and turbulence in the global economy (including, for instance, 'near-shoring'), rather than Brexit per se. However, as identified in the interviews and workshops, greater policy attention to skills development and education become key concerns. The *regional* benefits of Freeport economic development require a pipeline of opportunities, overcoming persistent skills gaps in the affected regions [22] particularly for low-carbon engineering (specifically in energy and transport). Nevertheless, for most of the stakeholders interviewed, the potential economic opportunity through high-skilled green job growth remained a key driver of local support for Freeports:

“to me, the Freeport is that opportunity to sort of fast forward and re-pivot [to high-value, low-carbon jobs].”

Low-carbon development opportunities – “the grit in the oyster”

There is a notable decarbonisation delivery requirement in the HM Treasury Freeport bidding prospectus. Proposals had to demonstrate how they would drive the decarbonisation agenda and minimise broader environmental impacts [9]. The details through which this could be achieved remained vague, however, and less highly specified than other requirements. In practice decarbonisation and negative environmental impact minimisation could apply to different aspects of the proposals including: energy use on the site(s); generation capacity; buildings design; import-export transport across the Freeport site; commuter links to and from/within sites of operation; the types of businesses located onsite and their direct contribution (or not) to broader decarbonization (e.g. net zero-relevant industries such as carbon capture and storage or the hydrogen economy); and shipping-related emissions.

Most stakeholder utterances on this theme expressed that Freeports are primarily sites of innovation (rather than simply low tax/low regulation); there was a concurrent emphasis upon low-carbon innovation at the heart of regional Freeport strategy, though this differed in approach depending upon the existing infrastructure and resources in the respective regions.

Freeports are described by participants as both providing economic and net zero development potential, though it is acknowledged that the direct benefits to businesses from this policy framework are not as extensive as initially foreseen by local authorities and business leaders. Freeports are therefore described here as akin to the proverbial *grit in the oyster*. In other words, although Freeport policy regarding decarbonisation is not particularly ‘strong’, nor specifically crafted for that goal, Freeports still nonetheless, according to the estimation of many significant stakeholders, hold potential to be the new matrix or kernel introduced into that respective regional economy around which a new systemic vision and dynamism (i.e., the proverbial ‘pearl’), needed for deep and place-based decarbonization, could yet form. Completing the metaphor, the (uncertainly) changing broader circumstances – of global trade and manufacturing, digitalization of industry etc.– may also here be the novel environment of the ‘oyster’ without which, reciprocally, the grit has little chance of such positive transformation.

Mechanisms by which the actual Freeports may seed such broader regional dynamism are examples of a *policy signal* [23] to the private sector, that seeks to align market responses to import-export and low carbon innovation strategy. For example, in Teesside the opportunities of Freeport development dovetails with existing low-carbon industrial development strategy around hydrogen innovation (particularly the move towards green hydrogen production powered by renewable energy sources):

“The future of the Tees Valley economy is best served if it’s about low-carbon industry because that’s where the big opportunity is. If Teesside can do hydrogen in a massive way and energy and carbon capture and storage, it can do all of these things in a huge way that other parts of the UK would to do, so it’s the right choice to pick.”

Whereas in the LCR, there is a more specific focus upon the decarbonisation of shipping and port infrastructure and the broader decarbonisation of energy and transport infrastructure occurring across the Northwest coast:

“There is an opportunity for Merseyside in terms of the decarbonisation agenda. So, if we could create something which is like a net-zero port.”

Though the policy coherence between Freeports and net zero innovation was mentioned and outlined by most stakeholder interviewees, there was also considerable expressed scepticism from some stakeholders that this would work in practice:

“I think there’s fundamental questions that need to be asked in terms of is this okay from a climate emergency point of view? Should we be doing it? And if so, if the answer’s yes then great, well then let’s build the port with infrastructure that’s suitable for 2022 and beyond, whereas everything seems to be very dated, an old-fashioned model of the market will provide, and we know that never works out well”

There was also an equivocal appetite for Freeports *driving*, or taking a significant lead in developing or implementing, a net-zero agenda:

“Decarbonisation needs to be considered when all investment cases are made but the Freeport is not going to drive the net-zero agenda.”

This is in part because decarbonization was seen by some as something that was “*happening anyway in parallel*”, rather than something led by the Freeport strategy, as one interviewee stated:

“On decarbonisation, there’s a requirement to be, to hit national targets, seventy-eight per cent reduction by is it 2038 and being net zero by 2050 [sic]. But what does that even mean for a Freeport?”

In this sense, Freeports were seen as an *adjacent* or *complementary* strand of the net-zero agenda rather than integral part of climate change mitigation policy strategy. However, given that Freeports were “*the only game in town*” they were generally construed as important mechanisms to “*build critical mass*” for collective action on climate change – again, the potential ‘grit’. Different means were proposed, some of which are apparently already being taken up by the Freeports themselves, as the policy now passes from its initial stages and formulation in the hands of central government to the actual executives of the Freeports. For example, it was noted that Freeports could host key technological system demonstrator projects, enabling expedited decisions on technological choice amongst various options currently in play. Here, for instance, it seems that several Freeports, including LCR, are collaborating in hydrogen freight vehicle testing. Alternatively, Freeports across England could become better coordinated, *collectively* acting as a crucial bridge for action between national & regional government on climate change:

“Why don’t the whole set of Freeports work together to lobby central Government regarding the freight decarbonization technology choices they are all making?”

For freight decarbonization one of the key issues is procurement of new vessels, and infrastructures for shipping and land-freight. Stakeholders commonly identified a chicken-and-egg deadlock that creates carbon lock-in: that without a government steer on the types of low-carbon transport technology support infrastructure available (e.g. electric vehicles, hydrogen etc.) a broader sector-wide transition will not happen, but government is reluctant to 'pick winners' and so looks to the private sector on which technology to support. If Freeports can prove successful in *aggregating a systemic regional strategy* for freight transport decarbonization, this might then scale upwards to changing national transport policy strategy in other sectors beyond the bounds of the Freeport sites.

Moreover, as a collection of nationally-significant sites for decarbonizing transport (infrastructure) and industry, and one that already has the ear of central government, – and hence a crucial intermediate layer between national government and individual private sector businesses – the collective influence of the Freeports and *their* experimentation with technologies could considerably ease the stand-off of these two actors, each waiting for the other to move first. That there are only 8 such Freeports also is potentially positive, both easing the collaboration amongst themselves, and increasing their voice in Whitehall, given the concern and interest of DLUHC and the Treasury is more concentrated than it was, say, for previous enterprise zone policies involving dozens of (often small) projects.

In these ways the Freeports could thus have significant impact through incubating a multi-scalar transformation, generating whole new regional economies and dynamic place-based socio-technical trajectories oriented to a growing momentum of broader regional (and thence national) decarbonization - i.e., as *Carbonfreeports* – even though this goes beyond their original purpose and stated remit in the Freeport policy. As one interviewee states:

“We need collaboration and a joined up strategy for decarbonization. Can Freeports help organize that meeting of minds?”

The *Carbonfreeport* concept would move beyond simply a geographically defined space of low-carbon innovation, towards a forum and nexus that builds systemic vision and multi-stakeholder participation in net-zero transition planning and (industrial) activity for transport. This approach represents a shared ethos between the project team and a range of regional stakeholders revealed in interviews and workshops in LCR and Teesside. Such a broad-reaching approach would posit *Carbonfreeports* as a platform for either system-level transformation:

“Having the ability to regenerate, think about it, plan it, do it in a bit better fashion as a committed local strategy ... they've identified places wider in the city region where they can focus port activity related to the thing that would then spread the wealth from the port into some of the other parts of the city region, but also takes advantage of thinking a bit more in a pre-planned fashion of how you'd want to do that.”

...or regional development transformation:

“It does provide an opportunity to have a real focus for strategic planning in terms of the infrastructure, in terms of the port and the airport and long-standing issues around

local communities and so on. To be able to actually crack this in one place with some resourcing"

Just transitions and Freeport development

Related to multi-stakeholder involvement in low-carbon transition, is the reach beyond businesses and local government to examine the broader community socio-environmental impacts of the Freeports. The Tees Valley and other Freeport areas across England are (or were) home to carbon intensive legacy industries including coal mining, ship building and steel manufacture. The decline of fossil fuel-intensive industries and the emergence of a post-industrial economic landscape is (potentially) exacerbated by the 'top-down' implementation of net-zero policies. The rapid shift to reducing greenhouse gas emissions from industrial development and transport could lead to job losses within legacy sectors, and thus a need for skills training and job transition support within specific communities (alongside the significant need and appetite for such training already noted above: i.e., regarding both training of the young and *re*-training of those already working, but in high-carbon industries). As one interviewee states:

"We have some industries that are going to die away because they are not consistent with net-zero. So the big issue here I think is about how we can transition people across from one set of industries to the other."

Net-zero is presented by some participants as a potential socio-economic threat to specific segments of existing Teesside and LCR communities. We observed significant concerns that existing local jobs would be lost – again, compounding long-standing challenges of unemployment from decline of once locally-dominant industries – due to the imperative to reduce carbon emissions, and that any new jobs created in the quest for green growth would either be located elsewhere, or would not be available to workers who were negatively impacted (e.g., due to skills mismatches):

"...we have got a lot of communities up here who are really vulnerable to, not to climate change, but to decarbonisation because they are in those jobs."

Just transitions thinking encourages regional policy makers and employers to consider the broader social impacts that rapid transformation of the regional economy will make to communities, livelihood opportunities and other forms of socio-environmental impacts (such as health inequalities). In the LCR's description of the Freeport benefits, they describe how benefits will "spill over and support impacts across an economic geography" (i.e., the wider Liverpool City Region) [24]. Yet as one interviewee stated:

"One of the underlying questions here and challenges here is local benefit versus regional benefit"

There were concerns raised that the costs (in terms of negative socio-environmental impacts) of Freeport designation and associated increases in port-related activity would fall on certain communities (e.g., those along existing freight routes or near heavy industry), while the

benefits (in terms of new, higher-skilled, better paying jobs) would be enjoyed by others. This is particularly the case given the financial arrangements of the Freeports policy, in which the most significant and long-lasting economic gains will come to local government in the form of the ringfenced tax income, which will pass to, and almost certainly remain with, the specific local authorities in which they are sited (i.e., not collected centrally and then shared around the broader combined authority city region):

"They just don't want to have an expanded port at all costs. They live in the neighbourhood, they're raising families and they don't want their environment to- They want a quality of life, they don't want their environmental health reduced or the risks associated"

and

"The tax-free status on logistic sites, that's where the jobs are going to be, the jobs are not going to be on the port"

The Department for Levelling Up, Housing and Communities describes [25] how: "Freeports support the Department for Transport's ambition for a freight strategy which builds on the UK's status as a global facing port nation. Freeports will amplify UK ports of all modes as hubs for innovation and investment, transforming our freight systems." This transformation does not automatically lead to decarbonisation, however. Increased road freight to and from the port systems will have negative impacts upon air quality if current diesel freight systems are used. New road infrastructure to support site workers and shipping will further exacerbate these impacts. And even if such additional emissions are comparatively small (e.g., estimated by Arup, in analysis for the Liverpool Freeport, at 2% over 5 years in the Liverpool case), this is still geographically concentrated and on top of existing emissions and air quality impacts that are already highly detrimental for health and a source of considerable local grievance and political tension.

One particular concern amongst stakeholders is the lack of joined up thinking between the Freeport site development and local public transport and non-road freight infrastructure. For example, in Teesside, public transport is planned at the scale of the local authority in Middlesbrough, rather than the supra-regional level of the Tees Valley Combined Authority. In LCR controversy remains over the building of a dual carriageway down the middle of the 3.5km long Rimrose Valley country park to relieve existing congestion through residential areas into the Port. Clearly, decarbonisation and air pollution planning for connective transport networks to and from port regions is not 'baked in' to the Freeport process – thus exacerbating carbon lock-in from fossil fuel powered transport within the locality – and concern frequently returned to such issues in our interviews with stakeholders. As multiple interviewees suggested, the decarbonisation of the Freeport requires a stronger set of mechanisms for broader community actors to shape the outcomes of Freeport site development, link to local environmental justice concerns and integrate with existing community-level infrastructure, such as bus and rail services and renewable energy generation capacity:

“It’s like, well yes, people do need jobs but it doesn’t have to be done in this high-handed manner, it ought to be done through democratic planning, consensus and using the right sites in the right way, linking with the right types of transport.”

Governance challenges

As a top-down policy strategy, there was a considerable distrust about the implementation of the Freeports as an arm of the levelling up agenda, on top of scepticism regarding the policy itself and its level of support and investment from central government:

“I was pretty underwhelmed by the Levelling Up paper if I’m honest.... there’s great broad-brush principles in there that you couldn’t disagree with. It’s always the devil in the detail.”

and

“The Freeport was really used as a metaphor for economic optimism”

The lack of clarity and specificity in what levelling up means in practice, combined with bold claims of their significance for regional development leads to the problem of a cycle of hype [26]: the widely touted “tsunami of jobs” in Teesside, or promises regarding hydrogen economy transformation raise the risk of national and local boosterism – in which heightened public expectations over socio-economic development outcomes lead to disappointment and disenfranchisement if the short- to medium-term benefits don’t match public perception of outcomes:

“I think the biggest problem will be overselling the benefits the Freeport can bring... The biggest danger, the biggest risk, is it not, in terms of communities losing faith in projects is to oversell and underdeliver”

and

“I see the benefits being more political and/or visibility, than real economic benefits. But the benefits to a politician or to, I guess a public figure, of something like freeports and enterprise zones, is that you try to concentrate economic activity, new economic activity, in a place. And it’s something you’ve built, and therefore you can point to it

The short-term nature of Freeports (with the current policy expiring in 2026) belies their promise to assist in the formulation of longer-term regional decarbonisation and economic strategy. Previous area-based initiatives, including enterprise zones, ran over longer periods, thus allowing for visible if not transformative impact:

“You haven’t got an awfully long period to benefit from things like the National Insurance contribution holiday and things. So, I don’t know whether there is scope in Government policy to kind of look at it and say, ‘Hey, this is working really well, we can extend it’”

Whilst other factors such as a lack of transparency surrounding the governance structures of local development corporations on Freeport sites create confusion for local businesses designing a longer-term growth strategy, and uncertainty over the level of local government support they will receive:

“There’s no transparency whatsoever... the way the port is integrated into the rest of the geography, I don’t think it’s very clear at all.”

Commitments to net-zero transformation in transport infrastructure and energy generation therefore require other forms of strategic commitment to target zero-carbon sectors – the Freeports alone cannot sustain this even where (as discussed above) they could be highly significant in enabling or kick-starting regional coordination.

Concerns were raised over the future of the levelling up agenda and the role of the Freeport within this national level economic rebalancing strategy. With the change of leadership underway in the Conservative party at the time of writing, (the final webinar was held shortly after the resignation of Prime Minister Johnson and Chancellor Sunak), suddenly the future of a northern England-focused levelling up regional development strategy was thrown into doubt. Despite concerns about potential economic and socio-environmental threat from Freeports, optimism was also expressed surrounding continued green sector job growth encapsulated in current and future Freeport policy strategies.

“There is no reason why we can’t become the centre of hydrogen production for the UK and an exporter of hydrogen technologies as well. There is absolutely no reason why we couldn’t really hold on to that. So, I find it hard to see the negatives.”

“Liverpool has masses of resources that can support the transition away from carbon fuels so yes fundamentally matching the two together [economic growth and decarbonisation] seems to make perfect sense”

Though during the brief premiership of Liz Truss, there was a brief pause and re-evaluation of the Freeport policy agenda. When Rishi Sunak, supported by Chancellor Jeremy Hunt replaced Truss and Kwarteng, the Freeports were back on the agenda. As such, despite political turmoil surrounding the Conservative Party leadership, under the new administration, Freeports will remain as a mechanism to rebalance the economy from the South of England to the North under the Levelling Up policy agenda. Indeed as of the 15th March 2023 Chancellor Jeremy Hunt announced the creation of 12 new *investment zones* in the Spring Budget to “drive business investment and level up” the country. The 12 areas agreed are: the West Midlands, Greater Manchester, the north-east, South Yorkshire, West Yorkshire, East Midlands, and crucially for this research : Teesside, and Liverpool. As reflected in the interviews with participants in this research conducted before this announcement, the commitment to low-tax trade and targeted regional investment remains strong, and this includes further Treasury support in the form of £8.8bn set aside for sustainable transport schemes. If the existing Freeport regions can capture the growing momentum behind net-zero transition in both transport and innovation coming from multiple governmental and non-

governmental drivers nationally and locally, then the CarbonFreePort concept becomes a feasible option for these new investment zones.

Key policy messages and next steps

The Carbonfreeports concept has gained considerable traction with the local stakeholders involved when framed as a forum for deeper engagement with net zero strategy across transport, energy infrastructure and regional governance for industrial development. While central government requirements for Freeport proposals to engage with net zero were somewhat loose and under-specified, both Tees Valley and LCR Freeports have incorporated significant decarbonisation elements into their plans for industrial innovation. However, concerns remain over capacity to deliver these without enhanced connections into wider local and national net zero strategies, including those for low carbon shipping within the port systems, regional transport networks for worker commuting, and freight networks. The lock-in of carbon intensive transportation systems remains a key risk for the freeports. Operating at a nexus of key strands of net-zero policy and practice – including transport - developing Freeports as Carbonfreeports would provide an opportunity to draw these strands together around a major place-based regeneration initiative. Understanding how decarbonisation strategy sits within the regional governance of the Freeport sites therefore requires attention to a range of inter-related socio-economic concerns. This pilot project opens-up a range of research avenues to explore the nature of policy coherence between levelling up and decarbonisation agendas within UK government industrial strategy, transportation policy and energy and infrastructure planning at Freeport sites and beyond. With the turbulent changes in Conservative Party leadership, an ongoing crisis of fuel and energy service affordability and post-Covid economic restructuring globally, there is a need to explore the following research objectives through future funded research and stakeholder engagement:

Greater attention within local and regional government to the effect of Freeport development on the decarbonization of regional transportation infrastructure networks into and out of site boundaries (rather than simply on-site low carbon innovation), given the overlapping governance scales of national, regional and local public transport planning, electric vehicle charging, rail, road and shipping freight networks.

The economics of agglomeration – the potential value of Freeports lies in the clustering of net-zero industrial innovation. Previous special economic zones have sometimes turned to lower value economic activities, so it is essential that Freeports retain this positive, ambitious element and that national and regional policymakers are not distracted from this focus on good jobs in net zero industries. There is a need for strong connections with local skills planning and initiatives to ensure that local communities can take advantage of new jobs in established and emerging low-carbon industries.

Transparency and good governance require stronger engagement across different scales of government – even many local politicians feel under-informed about the Freeport strategy and disengaged from the development of the policy at local and regional scales. For many

interviewed local policy stakeholders the strategy is perceived as being imposed from central government rather than a bottom-up policy strategy to alleviate local socio-economic and environmental challenges. Stronger governance of Freeports must be “multi-level” in the sense of co-ordinating strategy through clear lines of communication and cooperation across branches and scales of government. We argue that Freeport policy must also be *procedurally just* – that good governance in regional development strategy should necessarily involve consultation and broader stakeholder engagement with citizen-stakeholders as well as existing engagement with businesses and local authorities. Wider engagement with a broad range of stakeholder networks has the potential to substantively improve decision-making, enhance legitimacy and credibility, and contribute to a more just transition to net zero and economic regeneration.

“The grit in the oyster” – the Freeport policy as a standalone initiative is not capable of delivering all the ambitions that governmental and stakeholder rhetoric have imbued it with. However, it does present a focal point for cross-sectoral co-ordination to develop a systemic vision for local and regional economic regeneration and just transitions. Participants in this research argue Freeports have the scope to send a strong policy signal to align market responses to strategies for international trade and low-carbon innovation. This would include on the key issue of regional transport planning and its decarbonisation, with the extensive geographical scope of the Freeport’s themselves foregrounding yet further the potential – and, conversely, the necessity – for the Freeports to attend explicitly and energetically to this agenda.

“Levelling up” means different things at different scales. This is an issue of distributive and procedural justice. The imperative to level up at a macro-scale must be matched with attention to effects at a micro-scale – levelling up within the local/regional economic geographies is as important as levelling up between those geographies and more affluent parts of the UK. The distribution of social, environmental, and economic costs and benefits within and around Freeport designations requires significantly more attention. Connected to the issue of good governance, there is an urgent need for wider engagement on Freeport strategy development to ensure that all relevant stakeholders can contribute to these considerations. This relates to a challenge of regional-versus-local benefit: do the benefits of port development “spill over and support impacts across an economic geography”. The risk of Freeports and the newly-aligned agenda of geographically-defined “investment zones” generate a strong risk of knock-on economic effects to surrounding communities and competing regions. When economic investment is centred upon specific places, this creates a competitive rather than cooperative economic environment between regions, with investment and human capital moving towards to the low tax/low regulation zones. This has the potential to exacerbate existing environmental injustices from transport-related air pollution and carbon emissions, and to simply change the pattern of growth and deprivation between the ‘winners and losers’ within the spatial pattern of the policy framework. Only by strengthening the cooperative and engaged nature of the Freeport sites towards a shared platform for low carbon regional strategy can the net zero and Levelling Up agendas be strengthened through this policy.

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