Developing a Conceptual Framework for the Study of Low Carbon Policy at the City Level

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Developing a Regulationist Framework for the Study of Low Carbon Policy Making at the City Level: a Liverpool Case Study

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1.   INTRODUCTION

As it becomes increasingly apparent that international efforts to reduce greenhouse gas emissions are falling short of what is necessary to avoid dangerous climate change (Anderson and Bows, 2011, Hansen, 2009), a perhaps more productive low carbon policy domain at the sub-national level i.e. regions and cities has emerged (Rutland and Aylett, 2008, Rice, 2010, Hodson and Marvin, 2013, McGuirk et al., 2014).   Some cities are developing policy to adapt to a changing climate (Carmin et al., 2012, Bicknell et al., 2009), some are proactively looking to address resource throughputs in the urban metabolism (Rutherford, 2013), and some are concentrating on specific initiatives to reduce greenhouse gas emissions (Castán Broto and Bulkeley, 2013, Bulkeley and Betsill, 2013). This shift has seen climate change being reframed, not only as an issue which can be tackled through urban activities (Betsill, 2001), but also as one which will deliver improvements to the quality of life in urban areas e.g. better, more sustainable public transport or improved air quality.

However, in assessing the progress of these agendas, Bulkeley and Betsill (2013) identify a growing gap between rhetoric and the extent and effectiveness of the response. While there are many examples of worthwhile initiatives engaging with climate change debates, at a strategic level progress has been underwhelming. Hodson and Marvin (2013:2) argue that the transition to a low carbon economy entails radically different visions of how we produce and use energy and a significant reconfiguration of the energy infrastructure, but the concrete nature of this transition in policy terms, the scale at which it will happen, what interests advance and retard the process, or how conflictual or consensual this transition will be will be, is unclear. They argue that while the UK was the first country to adopt a statutory low carbon path, we know

less about exactly how a transition will be implemented at a sub national level and whether distinctive local responses can be formed. They advocate a "focus on the role of different places, geographies and social processes through which the transition to a Low Carbon Britain will take place" (2013:3).

There have been many studies of low carbon transition at a local level (Bulkeley et al., 2011, Bulkeley, 2013) but fewer theorisations of the process. McGuirk et al (2014) draw upon Gramscian perspectives on low carbon transitions in which new governance processes emerge to manage emissions reductions in complex socio-technical urban systems involving both human and non-human actors. In a similarly Foucauldian vein While et al. (2010) and While (2011) theorise eco-state re-restructuring around 'carbon control capitalism', a new environmental politics of urban development, in which the regulation of the use of energy by docile bodies is the object of low carbon state policy aimed at securing ecological protection. In contrast Hodson and Marvin's (2009) 'secure urbanism' makes energy security and resilience to climate shocks the goal of climate urbanism. As a contribution to this debate, and building on the work of While et al (2010), While (2011), and Jonas et al (2011), we develop regulationist approaches to this agenda and evaluate the extent to which urban managers are developing meaningful responses to climate change and its effects (including reductions in emissions at a rate necessary to avoid dangerous climate change), or, alternatively, merely using economic shifts towards low carbon growth industries as a means of re-igniting stalled economic growth. We examine how economic development strategies for the city are constructed and whether they represent a re-active response re-emphasising a commitment to those elements of a neoliberal mode of regulation that have been threatened since 2008; or whether it represents the adoption, transition towards, or attempts at the transition towards, a mode of regulation that is pro-active, i.e. breaking through into a new low carbon mode of regulation. Rather than theorising processes of re-regulation aimed at protecting society from ecological damage (While et al 2010) the paper argues that regulationist perspectives make clear that from 2008 pressures towards ecological re-regulation that some were concerned might be intrusive have stalled, and the transition to a low carbon economy can falter. The disciplinary potential of low carbon transitions

(Vanolo, 2014) is thus dissipated as carbon control is seen as a diversion from, not central to, the new politics of urban entrepreneurialism in the wake of the financial crash.

We illustrate the explanatory potential of our theoretical framework with a case study of low carbon policy making in Liverpool, UK, since 2007 (North, 2010a, b; North and Barker, 2011, North and Longhurst, 2013). Low Carbon Liverpool was an ESRC funded project which explored how Liverpool's economic development agencies facilitate the development of a healthy, vibrant and socially inclusive local economy, which, nonetheless, avoids dangerous climate change. Throughout this process, as researchers we had unique access to the developing policy process in Liverpool, allowing for the observation of high-level strategic policy meetings where urban managers have discussed how Liverpool will act with regards to low carbon policy and the co-production of policy recommendations with them (North, 2013). This in-depth insight into the day-to-day policy workings allowed for a substantially more detailed commentary on the policy process: we had a ringside seat as policy makers grappled with, and contested, emerging understandings of what the implications of climate change might or might not mean for the city.

2. CONCEPTUAL FRAMEWORK

2.1 Regulation Theory

Regulation Theory (Aglietta, 1979, Cocks, 2009, Jessop, 1992, Goodwin and Painter, 1996, Painter and Goodwin, 1995, Peck and Tickell, 1992, Lipietz, 1987) is a way of conceptualising the workings of the capitalist system, and in particular how it maintains prolonged periods of stability and growth over the medium and long term, despite its inherent tendencies to cyclical crisis. It was developed as a means to understand a period of stable and continued economic growth in the decades following World War II to the early 1970s: the period, known as 'Fordism', and how it transitioned to 'post-Fordism' in the following years (Goodwin and Painter, 1996). The transition began when the original 'Fordist' model entered a period of crisis as a result of the oil shock of 1973 and the changes in the global division of labour associated with globalisation which

meant that the mass manufacturing methods (from which Fordism took its name) began to suffer from rigidities in labour markets stemming from entrenched working class power when contrasted with the lower labour and environmental standards in the global South. This tested the capability of Fordist economic models in the global North to continue to generate profits (Harvey, 1992). Out of this crisis in the 1970s new processes of accumulation began to emerge, beginning the period what we now know as 'post-Fordism', characterised by more flexible labour markets and allocations (Jessop, 1992). These new processes of accumulation are constituted through new and distinctive social practices, including urban governance forms (Goodwin and Painter, 1997, Jessop, 2002).

Over a period of time these accumulation processes become accepted and adopted as part of the capitalist system itself and are then referred to as Modes of Regulation (MOR). As a newly successful MOR becomes established, in time it tends towards hegemony over competing economic discourses (Bristow, 2010). Importantly, these processes whereby new modes of regulation form and solidify before becoming hegemonic should not be viewed as permanent solutions to the underlying tendency of capitalism to regular crises, but merely a 'temporal fix' that either averts immediate crisis without addressing the fundamental contradictions of capitalism, or moves it to another place through attempts at a 'spatial fix' (Goodwin and Painter, 1996, Harvey, 1992). As such, modes of regulation need to be constantly reconfigured because over time, a MOR begins to adopt the same characteristics which made previous accumulation strategies predisposed to crisis, for example the tendency of markets towards herd behaviour, tendencies for profit levels to be squeezed through technological innovation, and working class resistance (Peck and Tickell, 1992). Consequently, these crisis periods often present the greatest opportunities to challenges hegemonic discourses, albeit often with the result of maintaining the prevailing capitalist power relations (Jessop, 2005, Bristow, 2010).

In considering regulation theory as a theoretical framework for understanding the development of climate policy at an urban level we must avoid two aporia. First, we need to avoid what Sayer (1989)

characterises as binary 'histories' by acknowledging the dangers of prematurely proclaiming a MOR as a 'success' (Peck and Tickell, 1992) as rarely, if ever, is a mode of regulation either perfectly formed or completely absent (Goodwin and Painter, 1997). Instead, economies tend to transition between modes of regulation which experience lesser or greater levels of coherence and longevity. Painter and Goodwin (1995) argue that the concept of an MOR is inherently problematic as it implies finality, coherence and completion, whilst simultaneously underemphasizing the processes of change and conflict through which coherence emerges. The formation of an MOR, they argue, should always be seen as an incomplete process through which any new MOR materialises through processes of economic development, policy making and class struggle without ever realising its totality amidst a continuing condition of fundamental capitalist crisis. Thus in this discussion we are not attempting to identify the emergence of a totally coherent new low carbon MOR that can be generalised from. Rather, we see attempts by cities to grapple with what the implications of dangerous climate change might, or might not, be as a process of discovery, of blind alleys and promising opportunities, not the wholesale adoption of a new settled MOR.

A second issue is a contestation over whether the principles of regulation theory can be applied at the local scale. Given that there is a significant variation in the range and extent of powers across national political systems, and given that some cities consistently outperform others owing to spatial differences in institutional composition and capacity, different, unevenly developed regulatory systems will overlap with each other across space: they cannot be isolated (Duncan and Goodwin, 1988; Painter and Goodwin 1995). This means that it becomes increasingly difficult to identify distinctive local MORs which are not the result of overlapping systems (Peck and Tickell, 1992). Consequently we wish to avoid accusations that we are painting a mode of regulation too locally. We seek to consider how regulationist approaches can be developed at the city level for the purposes of understanding the contribution of city-region strategies for the avoidance of dangerous climate change without engaging in any local fallacy (Brown and Purcell, 2005), attempting to cut the local off from other scales. We want to understand how place matters in the

construction of low carbon modes of regulation, and given uneven development, how the transition to a low carbon economy will be faster and more developed in some places than in others. Before we do this, we need to understand how the post-fordist MOR manifests itself locally through urban entrepreneurialism, and the extent that conceptions of urban entrepreneurialism advanced by urban managers support, retard or skew local action to avoid dangerous climate change in concrete ways.

2.2   The New Urban Politics and Urban Entrepreneurialism

In the last two decades, a New Urban Politics (Cox, 1993) of 'Urban Entrepreneurialism' (Hubbard and Hall, 1998, Harvey, 2001) has become one of the predominant methods of securing continued urban viability in an increasingly globalised market economy whereby cities compete – regionally, nationally and internationally – for globally footloose capital and the growth that it brings (Jessop, 1997, 1998). Acknowledging the post-fordist model of more flexible labour markets and the resulting lack of long term stability, the entrepreneurial city seeks to deploy place-specific strategies (Parkinson and Harding, 1995) in order make itself as attractive as possible to global businesses, with pressure to forego any policies or programmes, either social or environmental, which can be conceptualized in neoliberal eyes as a 'burden on business' (Peterson, 1981). Consequently entrepreneurial cities market themselves as 'business friendly' places that celebrate 'enterprise' and 'competitiveness' (Cochrane, 2003).

The efficacy and coherence of these 'competitiveness' approaches is contested, with some (Cox, 1997, 1998, Jessop, 1998, Bristow, 2010) arguing that their ubiquity renders such approaches meaningless in an environment where capital is often more locally embedded and not as footloose as economic managers would suggest. Going further, such is its widespread use in capitalist societies that this competitiveness agenda can be described as a zero-sum game through which narrowly conceived narratives of 'winners' and 'losers' can result in the marginalising (or worse) of unsuccessful cities or those who do not engage with the entrepreneurial agenda (Bristow, 2010, Peck and Tickell, 1994). Conceptions of what constitutes

'competitiveness' are cast so widely that policies previously seen as making only a nominal contribution to economic growth are hi-jacked in its support (Dannestram, 2008, Raco, 2008, Bristow, 2010). Equally there are concerns that, in embracing the language of competitiveness, city managers can minimise the impact of their own unique geographies of place, which in turn reduces the ability for policy to respond specific cultural or socio-economic needs (Bristow, 2010, Harrison, 2006, Malecki, 2004). Reflecting this, one of the most significant criticisms of the urban entrepreneurial model was that it was often generates vacuous, indistinguishable mission statements (Lovering, 1995) described by Griffiths (1998) as 'making sameness'. This lack of geographical tailoring can serve to minimise the intended impact of policy actions (Bristow, 2010). However, when addressed on its own terms, the entrepreneurial model is frequently seen as a success by urban policy makers, revitalizing city economies albeit often in sectors which are inaccessible to those who lost jobs in the immediate post-fordist downturn, often replacing full-time jobs with part-time work and often overlooking poorer areas of the city (Boyle and Hughes, 1994, Beazley et al., 1997).

2.3   The Emergence of a New Crisis?

A paradox of capitalism is that, through securing a period of economic stability, it becomes inevitable that a new period of crisis will occur. In the context of the energy crisis of the 1970s and the long term rise of the environmental movement Alain Lipietz (1992) argued that environmental crises might entail a fundamental challenge to growth based capitalism, a view shared by many Marxist-inspired environmental authors (While, Jonas and Gibbs, 2010). Might the need to avoid dangerous climate change and concerns that the Earth is now reaching some of its ecological limits (Anderson and Bows, 2011, IPCC, 2013, Hansen, 2009) and satisfy the changed conditions that mandate the development of a new MOR, replacing growth focused urban entrepreneurialism?

Promethean optimists argue that social and technical innovation may nullify concerns over resource constraints and set ecological limits (Bridge, 2010). They argue that the solution to ecological and climate

threats is markets (Friedman, 2008), or could be markets if the greatest case of market failure in human history was addressed (Stern, 2009). Acting now to avoid dangerous climate change and securing secure urbanism will be cheaper than not acting, and climate can be a new source of jobs and business opportunities. Here the re-regulation of economies around climate governance secures continued economic growth (While, Jonas and Gibbs, 2010: 77) and thus could be incorporated into existing, predominantly neo-liberal urban agendas.

For radical critics this appropriation of sustainability principles into neoliberal urban accumulation strategies has resulted in environmental principles being placed second to economic imperatives (While et al., 2010, Krueger and Gibbs, 2007, Owens and Cowell, 2002) and there are doubts to the extent that decarbonisation would be quick or deep enough to avoid calamity in the future. Consequently, debate about how, if it all, these two competing outcomes can be reconciled continues, with emissions reduction in particular being seen as both a problem and an opportunity for most advanced market economies (While, Jonas and Gibbs, 2010). Reflecting these issues, our work on low carbon transitions suggests that there are two models which can explain why the transition to a low carbon economy is not an uncontested or uncomplicated process: it is guided by the extent that local actors believe that climate change is an issue at all, if there is any action they can or should take, and if it represents an opportunity for or a threat to the settled MOR.

2.3.1   Reactive Regulation

This model reflects what we traditionally know as regulation theory, in that urban managers are simply responding, or reacting, to a 'crisis'. If the crisis is ecological or climate driven – for example the impact of Hurricanes Katrina and Sandy in New Orleans and New York respectively, or the continued threat of wildfires and water shortage on cities like Los Angeles, the city *may* respond to climate drivers and develop a new climate friendly MOR. But even this cannot be taken for granted. While in New York, Mayor Bloomberg

regarded Hurricane Sandy as a wakeup call for the city, in New Orleans neoliberal critics regarded the tragic loss of life as a result not of climate change but what they labelled as the dependency culture of the city's poor black residents (Peck, 2006). Many cities that do not face immediate threats from climate problems engage with mitigation while other urban leaders refuse to the end to see any relationship between individual weather events and long term climate change.

If the crisis is the financial crisis, growing a new low carbon sector is, understandably, seen as a vehicle to reignite, and then expand, the city's economy in the post-crisis period in order to reconnect with the previously existing successful mode of regulation. Following the logic of the urban entrepreneurial model the city and its managers are positioning their city to capitalize on the latest trends of growth delivery as a means to attract job, business and wealth creators into the city. But this is not the same as taking steps to avoid dangerous climate change by reducing greenhouse gas emissions and throughputs of other limited resources.

2.3.2 Proactive Regulation

The second model considers what happens when city leaders take on a proactive (or pre-emptive) outlook and attempt to position the city ahead of an anticipated crisis to minimise, or even nullify its effects. This might mean changing course to avoid future problems, adapt to changes in the global economy, engage with rising modes of accumulation, or responding to issues that emerge – such as a new awareness of the dangers of climate change. They look forward, not assuming that what has worked in the past will be the case in the future. They are entrepreneurial, not risk averse. Reflecting Adger et al's (2005) notions of 'bouncing forward' to a more sustainable world, proactive climate policy might deliver a second competitive advantage against rivals who did not act early and who must then take on more costly adaptation measures (While, 2011). Alternatively, if a city perceived few immediate climate threats being proactive might just mean engaging with the new urban entrepreneurial politics.

3. CONSTRUCTING LIVERPOOL'S LOW CARBON POLICY ENVIRONMENT

3.1   Liverpool's Post-Fordist crisis in context

In order to understand how Liverpool has responded to the challenge of climate change it is important to understand the historical context in which the city sits. Once a wealthy port city, in the 1970s and 1980s Liverpool faced a series of 'crisis' periods which critically undermined its social and economic fabric (Sykes et al., 2013).   The decimation of port employment through the triple-impact of jets replacing liners, containerization, and a shift in trade to the EU from the Commonwealth famously marooning the city on the 'wrong side of the country' devastated the city to a level that is difficult to comprehend today. Looking back, one economic development manager recalled:

> "not only was it economically poor it actually looked ravaged. It was a hurt city. … Many of the buildings hadn't been cleaned up, they were black. It stank to high heaven. Down by the docks … the silt was the depth of two London buses one on top of the other. It wasn't a pleasant seaside smell and this was right at the heart of the city centre, … a symbol of a past greatness and of current impotency" (economic development manager interviewed 2012).

In the mid-1980s, in an effort to address the city's problems the city's radical Labour council set an illegal budget that did not balance spending with revenue, and organised a locally well-supported campaign of resistance against centrally-imposed public spending cuts to win the resources it said the city needed before eventually being disbarred from office for their crimes against fiscal responsibility (Parkinson, 1985, Frost and North, 2013, Taafe and Mulhearn, 1988). In urban entrepreneurial terms this defeat represented the 'disciplining' of a recalcitrant city: government officials were reported as saying "there'll be rats eating babies on the streets before we do anything to help Liverpool" (Frost and North 2013: 85). It also cemented for critics a perception of a city in perhaps terminal decline and Liverpool was dubbed 'the city of lost

opportunities' as regeneration and investment opportunities passed it by through the late 1980s and 1990s (Bianchini and Parkinson, 1993).

Climbing back from the depths took some time. Perceptions of Liverpool only changed when the city was designated European Capital of Culture in 2008 and an estimated 15 million tourists spent £800m in the city (Garcia et al., 2010). Supported by significant European Union 'Objective One' funding for city centre revitalisation (Meegan, 2003), the Grosvenor-financed Liverpool One shopping centre created a regional shopping centre in a new district for the city, opening the city centre up to the Albert Dock and the new convention centre and arena on the banks of the Mersey: (Biddulph, 2011). This new draw, when added to the city's cultural offering, powered a revitalised visitor economy. The city's managers exuded pride in the revitalisation of a city that had finally come to terms with the consensus thinking in local economic development and embraced the entrepreneurial approach and, in doing so, began to use culture and tourism as a driver for economic regeneration (Boland, 2007, Jones and Wilks-Heeg, 2004, Meegan, 2003).

Revitalisation was however very geographically focussed on the city centre visitor economy. Reflecting wider concerns about the limits of culture-led regeneration (MacLeod, 2002, Mooney, 1999) social exclusion rates remained a problem away from the newly prosperous city centre (Boland, 2010, Biddulph, 2011), with Liverpool continuing to play host to some of the most deprived wards in the country, according to several rounds of the Index of Multiple Deprivation (Shaw et al., 2012, Nurse and Pemberton, 2010). Recognising that problems remained in the north of the city, one Labour Councillor argued:

> "There was a wave of working class people who lost their jobs from the decimation of unskilled manual occupations. They'd been left high and dry and we haven't really known what to do with them, I mean they're stuffed. Capital of Culture didn't help them. … We shouldn't walk away from that responsibility politically … they matter" (Labour councillor interviewed 2012).

The solution to this problem was extending what was seen to be a successful MOR so North Liverpool benefitted. Talk was of winning an Amazon distribution centre, call centres and supermarkets to provide

these manual jobs, while the waterfront would be the home to new skyscrapers built by Peel as part of their Atlantic Gateway strategy (Harrison, 2013). Links to Chinese finance meant these visionary, perhaps unreasonably hubristic, plans were dubbed the 'Shanghai-on-Mersey" strategy. Liverpool's problems would be addressed through extending the existing mode of regulation.

3.2   Reactive Regulation: reinforcing existing accumulation strategies to reignite growth in response to financial crisis.

In 2008 the newly revitalised city centre was not immediately perceived to be a resilient creature. In another cruel twist of fate, Liverpool One officially opened on September 15, 2008, the day that Lehman Brothers went bankrupt and there were concerns that the full force of the economic crisis would hit the city. Major public spending cuts and the abolition of the Regional Development Agencies followed the election of the Coalition in May 2010. Was the city, just recently back on its feet, likely to now go through a rerun of the problems of the 1970s and 1980s, with the Capital of Culture year in hindsight just a brief respite from continued decline? The city's response to this renewed crisis was to capitalise on the Year as Capital of Culture and the opening of Liverpool One and to press ahead with an accumulation strategy that seemed to be working, a classical urban boosterism led by Liverpool's economic development agency, Liverpool Vision, the city region's Local Enterprise Partnership (The Mersey Partnership), and Liverpool Councils' political and officer leadership. The city region economic strategy identified four themes;

- *The visitor economy* – building on the reinvention of the city's image.
- *The knowledge economy* – growing businesses and employment focused on knowledge.
- *The Super Port* – arguing that the global shipping industry is likely to be composed of a small number of global companies with fewer, much larger ships, the Peel Port-owned Super Port plan brings together the airport, the docks and a new logistic infrastructure to capitalise on these developments.

- *The Low Carbon Economy* – developing a new environmental technology sector to generate technological responses to climate change, and to capitalise on the generation of off shore wind in Liverpool Bay (TMP., 2009).

Reflecting the concerns of the New Urban Politics Liverpool's GVA performance remained a fixation for economic managers and that success, or failure, would be measured on those terms. The perceived gap in new start-ups on Merseyside compared to the city's competitors was a persistent theme. In 2012 Labour Mayor Joe Anderson was elected. While his populist platform was reminiscent of the Militant days with its promises to build houses, his administration remained attached to the new consensus about Liverpool's future. 2014 saw the building of more convention space on the banks of the Mersey and the city host an International Festival of Business which aimed to "attract entrepreneurs, innovators, investors and position Liverpool as one of Europe's most enterprising cities"[1]. The city this time round would not fight central government, it would invest to grow more wealth – the entrepreneurial city encapsulated.

3.3   Proactive climate regulation: constructing Liverpool Green Partnership.

Not everyone in the city was enamoured with the new growth strategy that made no reference to reducing greenhouse gas emissions. Responding to the Stern Review (2007) and emerging concerns around the dangers of anthropogenic climate change a number of lower level economic development managers in the Chamber of Commerce, Liverpool Vision and the environmental charity Groundwork wanted to explore the extent that the city had the right polices in place to do what was necessary to avoid dangerous climate change as well as secure the city's future prosperity. 'Low Carbon Liverpool' (LCL), an ESRC-funded knowledge exchange partnership between the University of Liverpool and these local partners identified a number of policies Liverpool could employ to improve its environmental performance, in particular to support small businesses and the communities of North Liverpool (North and Barker, 2011). As well as

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[1] http://www.joeforliverpool.com/policies/business.asp#c

specific policies for SMEs and North Liverpool LCL argued that that the city mainstream 'low carbon' into all of its economic drivers, i.e. seek to reduce emissions from economic activity in the city overall, as opposed to treating the low carbon sector as a new, separate, economic growth area in its own right – the position taken by the city's new Local Enterprise Partnership (TMP 2009). LCL advocated the creation of a 'Green Partnership' to progress a distinctively low carbon agenda and from 2011, a wider number of partners from across the public, private and community sectors in Liverpool, including Arup, the Environment Agency, Liverpool Primary Care Trust, Mersey Forest, and Mersey Travel came together to establish Liverpool Green Partnership (LGP). Interestingly, the formation of LGP was encouraged by Liverpool Council's cabinet members for regeneration and for climate change and the environment.

The Partnership adopted the LCL report's recommendation of considering a bid to be a future European Green Capital (EGC). The logic behind this recommendation was twofold. Firstly, in awarding EGC, cities must demonstrate strong performance across twelve criteria which can be viewed as a benchmark of environmental best practice. An audit of performance in these areas to see if a bid was even realistic allowed the partners to focus on specific issues. The bidding process focuses attention on the twelve criteria (rather than the more nebulous goal of reducing overall emissions by 80 percent), and has the potential catalyse the effort and allow area of poor performance to be identified and (perhaps) addressed. Furthermore, the bidding process to host the award has become increasingly competitive, and the partners understood that the benefit of the EGC process was in the audit and addressing poor performance, not necessarily making the bid itself – to say nothing of winning. This element of competitiveness appealed to the entrepreneurial tendencies of the city's economic managers for whom international events such as the European Capital of Culture, and the 2014 International Festival of Business were deployed to demonstrate the city's global economic potential. Thus the EGC process engaged with a New Environmental Politics of Urban Development (NEPUD – c.f. While et. al. 2010) within the overall umbrella of urban entrepreneurialism.

The audit was undertaken and suggested that a bid might be credible, although four areas of poor performance were identified: recycling rates, cycle lanes, green cars, and domestic water metering. The city performed well in areas of green and open space, public transport, and low carbon economic development. The Green Partnership was asked to submit evidence to a Mayoral Commission focussing on Liverpool's role in Europe, and the value of a European Green Capital bid formed one of the Commission's recommendations. Although Bristol's success in being appointed EGC 2015 meant that a prospective Liverpool bid would be a longer term agenda, the benefits of the audit and the focus it provided had already been reaped.

Moving forward, the LGP began to set out its work programme through a mission statement which identified three potential ways forward, which we have called the 'New York', the 'Los Angeles' and the 'Bristol' models. The New York model worked with the grain of entrepreneurial urbanism and drew heavily on the strategic example of PlanNYC as a way to emphasise the importance of long term sustainability and adaptation to climate change for strategic competitiveness agendas. It was attractive as it provided an example of how climate change can be tackled by major cities, and fit with the city's established narrative of striving to be a 'world city' which would place it alongside other major centres such as New York. Other partners were reassured that PlanNYC was strategic, seemed to be taking climate change seriously, and nodded towards social inclusion and environmental justice (Rosan, 2012).

The example of the Los Angeles Regional Collaborative on Climate Change (LARC) was used to outline how a collaborative public-private partnership of organisations could operate with the specific objective of addressing the quantification and reduction of greenhouse gas emissions (Kennedy et al., 2011). To this end, the LGP invited a senior representative from LARC as a keynote speaker to an event in 2013. Reflecting the prestige that such a representative from a major city brought, the series of events arranged for their visit attracted senior policy makers from across the city, including some who had been amongst the most reticent to engage with the low carbon agenda. An offer of future collaboration through the International Festival of Business was made.

The Bristol model represented a 'Plan B' whereby what a visiting speaker from Bristol called an "irritating little voice" would be mobilised from within civil society and the private sector to call for movement on low carbon issues should city leaders be resistant to the agenda. Bristol, like Liverpool, has a vibrant environmental social economy and community sector (Amin et al., 2002, Brownlee, 2011) and in many ways the drive for the city to bid to be Green Capital (an award which it won for 2015) was driven from below. Worse would be that the city lacked the institutional capacity and/or political will to act strategically on either the New York or LA models, while grassroots actors did not have the capacity to work from below to provide sufficient impetus for change. In which case the LGP would act pragmatically, doing what it could when it could, with the community and environmental sectors developing what low carbon policies and programmes they could in grassroots niches (Seyfang and Smith, 2007). The Chamber would work with the private sector (North and Nurse, 2014).

4. DISCUSSION

In an examination of who supports and retards the transition to a low carbon economy, regulationist perspectives help understand places where transition falters and eco-reregulation is delayed. Progress has been patchy and the signs are mixed. The outcome of a meeting in March 2013 hosted by the outgoing Bishop of Liverpool to catalyse action was that a risk averse city council established a high level Mayoral Commission on the Environment which, by the time of writing (March 2014), had only met twice a year later, and looked to many like an attempt to marginalise the low carbon agenda. On the other hand, the Green Partnership was continuing to work as a coalition of the willing, despite continued concerns at the limited engagement from the city council, and the absence of the utility companies who need to remake the city's energy infrastructure and of key private sector players Peel and Grosvenor. While LGPs efforts were boosted by the successful award of EU funding to resource the continuing its work, it has struggled to get climate onto the agenda locally, and the entrepreneurial thesis has remained the dominant discourse.

As through research we observed the emergence of the low carbon agenda, it became clear that for city managers the low carbon agenda meant the development of a new environmental growth sector to generate new jobs and businesses: "this is not about hair shirts" we were told: "if low carbon does not generate jobs and businesses we'll find a sector that will". Other partners begged us to stress the jobs and businesses that would be created from the low carbon agenda, not the emissions saved. Far from seeking to mitigate the effects of climate change, some in the city are anticipating it, with, for example, a future opening of the North West Passage being seen as an opportunity to create shipping routes to Asia from which Liverpool can benefit. Despite the contributions that air travel can make to a city's carbon footprint any attempt to raise these issues with city managers were given a distinctly unfavourable welcome with strong indications that the airport would remain untouched – at the heart of economic strategy. The vision is of a globally connected, not a low carbon Liverpool.

Thus whilst the city has proactively developed new low carbon industries, noticeably from offshore wind in the Irish Sea, it has thus far failed to act strategically to respond to a crisis for which, as the place recognised by UNESCO as where the carbon-based global trading system that generated the climate crisis began, it has significant geographies of responsibility (North 2010b). The city region does have a Sustainable Energy Action Plan, but it does not contain any local targets for emission reduction. In LGP we can identify a growing movement of actors who feel that the city needs to move rapidly towards a more pro-active MOR that does engage with the need to avoid dangerous climate change, but their vision is far from hegemonic. There are concerns that LGP's more comprehensive low carbon agenda will remain a competing discourse in a crowded, yet disjointed, policy environment, able to deliver only limited action. Thus Liverpool still sits within the reactive model seeking a regulatory fix which responds to the financial crisis of 2008 and the legacies of deindustrialisation which still blight north Liverpool.

There are a number of reasons for the failure of a low carbon MOR to break through. As Hodson and Marvin (2013:1-5) argue, local low carbon agendas are advanced and retarded by specific local actors embedded in places with distinctive local cultures, politics and processes. Policy innovation is rarely the

result of the persuasiveness of the arguments alone: politics matters. For some city managers the entrepreneurial mode of regulation is still delivering benefits to the city centre in the form of the visitor economy. In retrospect Liverpool was, for once, not the first place that economic crisis hit, not the place where it was deepest, and not the last place for the recovery to begin.   After a brief hiatus, visitor numbers held up. By 2010, Liverpool had the highest increase in GVA of all UK cities outside London, closing the gap to some of the wealthier cities (ONS, cited by Mersey Partnership, 2012).   By early 2014, Rough Guides designated Liverpool as one of planet's ten 'must visit' cities, an acclamation that would not have been thought credible by someone viewing the post-industrial wasteland the city was thirty years earlier. City managers are, in the terms of the New Urban Politics, quite sensibly looking to supplement city centre jobs with new low carbon economic activities and by positioning Liverpool as a city open for business according to the dictates of the entrepreneurial mode. They reacted to the crisis by reinforcing the existing MOR.

The second barrier to further action on low carbon is austerity. The Mayor encapsulated this perception:

> "When we talk about sustainability, people usually think of the environment and the future of the planet and all things green. But to me, sustainability simply means the ability to keep going, to do what we do and that means providing the services this City and its people need. Because of grant and funding cuts from this coalition government, we have some tough choices ahead. … In simple terms if we do nothing we will be spending significantly more on services than we receive through council tax and other income. This scenario will be upon us within two years so it is vital we address the issue now." (Mayor Joe Anderson, September 2013)[2]

Austerity means the city lacks the institutional capacity to act strategically. Officers are doing what they have to in an environment where central government funding does not cover statutory services: Action on

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[2] http://liverpoolmayorjoeblogs.wordpress.com/2013/09/09/making-our-city-sustainable/

climate is, they argue, 'nice to do, not a priority'.   Austerity does provide a rationale for the city's choices: some low carbon experiments, for example with solar panels on social housing, *were* victims of austerity. But it is also an issue of political will. Entrepreneurial projects that the city council believes will underpin future development *are* funded (e.g. the International Festival of Business), if necessary through borrowing to invest (e.g. a new convention centre). Choices are made that raise emissions, for example cutting city centre car parking charges, abolishing bus lanes, and planning to build on public parkland.   The low carbon agenda is discounted as coming from "*the leafy south of the city*", while the priority is jobs for those in the North. Thus city leaders give verbal support to the LGP, argue rhetorically that they would like Liverpool to be the "greenest city in Europe". They claim that their independent Mayoral Commission on the Environment is the mechanism to develop a strategic environmental agenda, but their concrete actions are raising emissions. Concrete action to reduce emissions, the LA model, is off the agenda. There is no politically powerful movement as yet able to advance the counter strategy, and the capacity of a growing network to advance the agenda through the 'Bristol Strategy' in a northern English city dominated by a powerful Labour Mayor is unknown, but obviously faces challenges. Thus a regulation theory-inspired analysis of who argues what in the city explains the uneven development of the transition to a low carbon economy, of a radical configuration of the way we use energy and the major cuts in emissions necessary to deliver an 80% cut in emissions by 2050.

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