Sustainability transitions and green regional economies

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Professor David Gibbs presents case studies of two regions (Styria and the East of England) and adopts a multi-level perspective to investigate how these regions have attempted to transition to more sustainable green economies.

:Introduction:

There has been growing interest by policy makers and academics in the development of the green economy, defined as being “low carbon, resource

efficient, and socially inclusive" (UNEP, 2011: 16). Regions and cities have begun to position themselves as leaders in the green economy and as destinations for new forms of investment. However, we have limited understanding of how these developments occur over space, and little purchase on the ways local and regional governments are promoting their green economies or related institutional and governance shifts. Past research suggests that cities and regions are key locations where green economy transitions are developing (Gibbs and O'Neill, 2014). These have been termed 'transition regions' constituting sub-national administrative areas with policies and support mechanisms in place to support green industries (Cooke, 2011).

A useful perspective from which to investigate the growth of the green economy is provided by sustainability transitions research (Geels, 2005). Here a key focus has been on experimentation with new ideas and technologies in niches and the lessons for policy (Smith, 2003). Niche developments are the source of new socio-technical configurations which can grow, and perhaps displace, incumbent unsustainable regimes (Berkhout et al, 2003). However, little attention has been paid to where niche development or transitions are taking place (McCauley and Stephens, 2012). In cases where space has been explicitly addressed, the main focus has been on national scale transitions (Hodson and Marvin, 2010). This lack of spatial context is recognised as an important shortcoming in transitions research, as inattention to space hinders it from adequately capturing the evolution and development of networks of institutions, entrepreneurs and innovations into stable forms that can challenge and replace existing regimes (Truffer and Coenen, 2012). Sustainability transitions will depend on the interplay of actors, networks and institutions available in some places and not others (Raven et al., 2012). Some regions may offer greater opportunity for niches to develop and operate and for the formation and development of green economy activities (Coenen et al., 2010).

We therefore need to move beyond a view of cities and regions as simply places for experimentation and demonstration, and link together the concept of the niche and regional, national and global scales (Gibbs and O'Neill, 2017). Some of the factors at work in a region will not be specifically 'local' and of importance is how actors adapt or adopt national and international factors and how these come to be configured locally. Differences and linkages between scales are often overlooked and the fact that localized activities and resources are subject to external

pressures can be neglected if we ignore the relations between scales in analysis (Hansen and Coenen, 2015). Actors within a locality need to perceive and translate these external developments in order to have purchase (Geels and Schot, 2007). The role of purposive actors and institutions is therefore important in this process, not just within the local area, but also to help transcend the city and regional scales.

This research aims to develop new insights into the processes of transition towards green regional economies, through exploring how regional actors aim to bring about transitions and how the processes of transition in turn affects those places e.g. adoption of renewable energy, community-based economic initiatives, self-promotion as key green economy locations. This research note reports on initial findings from case studies in Styria, Austria and the East of England (other case studies include Bremerhaven/Cuxhaven in Germany and the Humber sub-region in the UK). The research has involved interviews with local government officials, policy makers and business representatives, attendance at policy committees and secondary research from documentation and website material.

Green Tech Valley, Styria

Styria's 'Green Tech Valley' claims to be the "world's highest concentration in the areas of bioenergy, solar energy, waste and resource management and green buildings" and "the global hotspot for advanced energy and environmental technologies and proven growth through innovation" (Eco World, 2016: 6). Promotional material for Green Tech Valley claims that more than 1000 jobs have been created each year since 2005, with sales growth of 131% compared to 73% sales growth in green tech companies globally (for the period 2006-14). Eco World Styria is the specialised networking and support organisation for the Green Tech Valley and is a provincial and city (Graz) government-supported initiative, but also involves a range of institutions in a triple helix research-industry-government approach (Schreuer et al., 2010). The organisation provides information to firms, assists them in gaining new markets, engages in horizon scanning for new technological developments and also provides regional support for R&D, training, and apprenticeships.

Eco World uses the Green Tech Valley appellation and its designation as "the worldwide No. 1 green tech cluster" by the US Clean Edge group in 2010 (Eco World, 2016: 6) to brand and position itself externally. Eco World is a member of

a range of international green economy networks including the Green Tech Service Alliance, EcoCluP, and the International Cleantech Network (ICN). These have promotional value, with Eco World staff giving presentations and study tours to representatives from overseas local and regional government staff. The development of the Green Tech Service Alliance, with partners in ten countries (six in the EU, plus Singapore, South Korea, Canada and the USA) also enables Styria's companies to access business opportunities in other green business clusters. Such international networking activities indicate the need to consider multi-scalarity in transitions research (Truffer et al., 2015) – these help to legitimise efforts to develop a green-tech cluster by emphasising (a) Styria as an important global player in the green economy, and (b) the potential gains to be derived locally through export opportunities and through potential inward investment into Green Tech Valley. In this manner, networking activities transcend existing governance levels to create an additional source of pressure on incumbent regimes. Such networking activities in Styria also support the argument that we need to distinguish between 'local experiments' in local networks in specific geographical places and a 'global niche level' that is an emerging institutional environment of shared rules which transcends and connects particular places (Geels and Raven, 2006). In terms of 'local experiments', while Eco World encourages firm location, new start-ups and innovation, it is not solely focused on economic development, with a major shift towards renewable energy use in the province and support for local, community and local energy initiatives. The drive towards renewable energy is assisted by a strong regime context, which encourages renewable energy use in the local market, and is supported by both Federal and regional energy strategies. The city of Graz was an early mover in implementing demand-side energy management programmes and promoted the use of both district heating and solar thermal energy.

From a sustainability transitions perspective, Styria indicates the important role of local visions to mobilise local actors and the key role of intermediaries (such as Eco World). For green economy firms, involvement in Eco World helps legitimise their activities and to counter competing industries and the dominant energy regime, as well as challenging institutionalised interest groups. While the Styria case study does not indicate regime change, it can be taken to represent local 'regime variation' which is more sustainable than the dominant energy regime. International awards and branding have also played an important part, helping to

alter regional self-perceptions. However, these may be less important in relation to actual implementation than their role in creating a self-reinforcing process. Hence, "the bases for such momentum building for sustainability transition were…not so much changes in the physical infrastructures or environmental policy outcomes, but rather the discursive dynamics and innovative concepts, international recognition and awards, and public appreciation" (Rohracher and Späth, 2014: 1421).

Green Pathfinder, East of England

New Anglia is the Local Economic Partnership (LEP) for the counties of Norfolk and Suffolk and was designated as a pathfinder for the green economy by central government in 2012. The New Anglia LEP was chosen as being "ideally suited to lead the UK's transition to a green economy across three focus areas: low carbon, natural capital and social capital" (New Anglia, 2015: 4). The aim of pathfinder projects was to support and maximise the benefits of partnership working and to gain a better understanding (at both local and national levels) of how LEPs could play a major role in economic development at the local level. The New Anglia Manifesto for the green economy defines it as "one in which economic growth is combined with continued reductions of greenhouse gas emissions and other environmental impacts are reduced" (New Anglia, 2012a: 12), although the Manifesto document also states that "employment opportunities, skill development, enhancing social cohesion, and individual and community well-being are all important goals" (15).

Initial key strands were to: develop the Low Carbon and Environmental Goods and Services (LCEGS) sector with a 5 year growth plan for £617m in market value and up to 4000 jobs; build business resource efficiency, with savings to business of up to £1.6bn and 2.6 Mt CO2e; and to attract and retain low carbon capacity, including 200 skilled energy sector jobs (HM Government, 2011). Developing business opportunities in the green economy was also a focus, through the development of a Low Carbon Innovation Centre and Innovation Fund, linked to the University of East Anglia's (UEA) Adapt Low Carbon Group. The LEP area currently has sales of £2.95bn (3% of the UK total) from 1224 LCEGS companies employing 21,399 people (New Anglia, 2015). As in the case of Styria, the pathfinder project also aimed to establish a 'green economy brand' for the New Anglia LEP and "to lead the transition towards a green economy", not just regionally, but also acting as a model nationally. A Manifesto, 'Leading the Way',

was published in 2012 which aimed to grow green economy jobs and GVA, while reducing carbon emissions. The LEP also piloted DEFRA's Local Environment and Economic Development toolkit (Sunderland and Butterworth, 2016), as an example for other UK regions. The green economy strategy has been driven by local purposive actors and institutions, such as Suffolk County Council's aim to be the "greenest county" and individual LEP board members' commitment to sustainability issues (e.g. at the time of the pathfinder work the chair of the LEP was Chief Executive of Adnams brewery which has developed a number of corporate environmental initiatives, including developing a bioenergy plant to produce biomethane from brewery waste).

The energy sector was a particular focus of the Pathfinder project, with offshore energy seen as having considerable potential. There are a number of offshore wind energy developments near the coast (e.g. East Anglia One windfarm with 102 turbines and 714 MW capacity), and a Centre for Offshore Renewable Energy (CORE, Lowestoft/Great Yarmouth is one of six COREs designated by the UK government. See HM Government, 2011) has been established at Great Yarmouth/Lowestoft, with Orbis Energy at Lowestoft providing a specialist hub for offshore renewable energy, including incubator space for green economy-related small firms. An Enterprise Zone and Assisted Area status were also established in the two towns to assist these developments. These offshore developments were viewed as having potential to "establish a significant green economy USP" (New Anglia, 2012a: 16) and the area has been active in promoting this at international renewable energy trade events. In terms of 'local experiments', potential was identified for local renewables-based energy networks (e.g. wind, solar, biomass and anaerobic digestion) which could be community-owned. These are viewed as appropriate given the rural nature of much of the New Anglia LEP and existing poor infrastructure. More contentiously, nuclear power is also promoted as a key sector and contributor to a low carbon future, reflecting the presence of Sizewell B nuclear power station, and its potential expansion through Sizewell C, and the realpolitik of retaining an important local employer.

Following on from Pathfinder status, the LEP's more recent Strategic Economic Plan focuses on the agri-tech sector, life sciences, ICTs and creative digital, as well as energy and low carbon. In addition to the energy focus, the green economy strategy continues through a green economy partnership, as well as

through links with the Local Nature Partnership, 'Wild Anglia', in the form of a joint Business and Biodiversity Board (Wild Anglia, n.d.). Here the green economy/wild spaces are seen as underpinning other sectors, such as tourism, as well as creating an environment that attracts and retains skilled labour (New Anglia, 2012b) and could potentially act as more disruptive niche than has occurred to date. However, despite several successes, it would appear that there is still a need to embed green growth principles and sustainability across all of the LEP's programmes and sectors (New Anglia, 2017). Thus while the LEP retains a focus on developing the area as a key site for low carbon and energy-related developments including renewable energy, carbon capture and storage and nuclear power, a commitment to making the green economy central to others sectors is less evident.

Conclusions

In both of the case study examples, shifting landscape imperatives around climate change and the need to reduce carbon emissions provide legitimacy to the green economy niche and justification for the policies and initiatives of key actors. The predominant form of the green economy that is being promoted in both cases is one of ecological modernisation, effectively representing the incumbent capitalist-consumerist economy with a green hue. In terms of transitions research, ecological modernisation approaches to the green economy can be viewed as a niche development that could challenge the dominant regime. However, both case study areas are seeing gradual improvements rather than disruptive innovation and incremental changes in terms of their broader socio-technical structures, which are much more readily aligned with the dominant regime and/or can be incorporated by it. In transitions terms, this represents a 'fit and conform' approach, whereby niche innovations are readily aligned and are competitive in existing contexts. Moreover, in both areas the green economy effectively remains a niche sector and other key sectors that are being supported, such as the automotive and steel industries in Styria and the nuclear industry in the East of England, fit less well with a green economy image.

The longer established example of Styria provides some evidence of moving beyond 'local experiments' to construct a 'global niche' of an emerging institutional environment of shared rules which transcends scale and particular places. This has taken the form of participating in, and helping to build, international networks of similar green economy developments (often funded

through the EU) such as the International Cleantech Network. As yet New Anglia has a locally focused clean tech network in Cleantech East without the international links to other clean tech clusters, although there has been representation by the LEP at offshore wind energy events in Europe. Such networking initiatives help to legitimise the activities of their members (for both Ecoworld and New Anglia), but also serves as a means to promote increased exports, sales and investment, and read as traditional versions of neoliberal capitalism albeit with different 'products'. The explicit or implicit assumption of much green economy policy is that it involves a reliance on technologically-led solutions and the development of new low carbon sectors. Policies to develop green economies therefore often appear to be a thinly veiled version of business-as-usual, rather than a shift to a more sustainable economy where social and environmental aspects have parity with economic aspects, epitomising a process of paradigm fixing rather than paradigm shifting (Bina, 2013).

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