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Regional Strategies for Renewable Energies: Development Processes in Greater Manchester

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Regional Strategies for Renewable Energies: Development Processes in Greater Manchester

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Abstract *Making the transition to renewable, low-carbon forms of energy could be the defining question of our times. Especially for complex problems such as energy supply the regional scale and new forms of control, coordination and cooperation—subsumed under the term regional governance—are widely discussed both in politics (e.g. G8 conferences, Climate Summits, etc.) and academia. The turn from conventional to renewable energies is one major topic of discussion. For this process of change, regional governance can be seen as the best way to initiate it. With the help of a case study conducted in Greater Manchester, UK, this article concentrates on two points: (1) the development of regional governance arrangements in the light of a low-carbon agenda as mixture of path-dependent bottom-up and top-down approaches and (2) the impacts of specific constellations and environments for regional energy development that include institutional rules, strategic behaviour of actors and strategic discourses. This article shows that the integration of a regional governance structure into the strategic development process can achieve a substantial qualitative improvement for the development of a regional energy strategy.*

Introduction

The application of renewable energies in its most efficient way—decentralized within a regional scale—will be the ultimate chance for a long-lasting prosperous regional development. The region, thereby, is a territorial unit that is nested between the local and the national level (e.g. a city region), and is defined by actors, who want to utilize renewables. The case study presented in this article, from Greater Manchester, UK, examines two main topics with regard to the promotion of such an energy system: decentralized renewable energies in a city-regional context, and strategies, emerging out of governance structures. The core interests of the study are to gain insights into the arrangement's evolution in the

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contexts of energy strategies, especially focusing actor constellations and institutional environments, and to understand the roles of regional institutions and actors within energy development processes (impacts, discourses and strategic behaviour). Greater Manchester offers an interesting case, because the development of their city-regional energy strategy is just finished, and therefore, the evolutionary and institutional setting can be reconstructed.

For the utilization of renewable energies—energy generated out of resources that are not (necessarily) depleted, as long as the replacement rate is not exceeded by usage—the regional scale is important in two ways. First, there is a significant potential for the spreading of various risks. Within a regional context, the utilization of different renewable energy schemes helps to cushion fluctuating generation (security of supply), and substitute energy imports (independency). Furthermore, development costs for energy projects can, within a region, be shared between a larger number of actors, such as municipalities, small enterprises or citizens (collective persistence). This sets energy projects on a broader base and, additionally, enables the actors to profit directly from the energy plants. And second, at the regional scale, larger social networks can allow deliberative or cooperative processes that, in turn, can encourage the further development of social capital. Indeed, renewable energy development at the regional level can be most effective for increasing the capacity of regions and encouraging willingness to promote specific measures. Especially the development of regional strategies is supportive for future decision-making, because they help to increase the adaptive capacity of regions and the willingness for implementation of specific measures at the same time (cf. Davoudi *et al.*, 2009; Frommer, 2009).

These issues highlight Burton's (1980) notion that the transition of the energy system from centralized, nuclear and fossil fuel systems to renewable, decentralized structures requires cooperation at different scales. The collaborative and coordinated development of strategies within a governance framework is one way of meeting this challenge (Davoudi *et al*., 2009). Collaboration, or collective action, demands for a minimum level of rules and division of tasks. It connects local and regional actors, and by that sets their problems on the agenda and encourages them to find ways of collective working. Coordination, or horizontal self-control, can either be hierarchical, market driven or have a network character. The chosen mode of coordination depends on the participating actors and the institutional framework they face—and create. Both aspects illustrate governance as mechanisms of social order (cf. Fürst, 2006; Kleinfeld, 2006; Pütz, 2004).

These insights in combination with questions of energy are hardly addressed in academic discourses. What we can find are attempts to conceptualize strategy development for adapting to climatic change in a more general sense (Davoudi *et al*., 2009; Frommer, 2009; IPCC, 2011). The focus is set on strategic planning as a "social" process: negotiations, coordination, routines and even coincidence supplement the technical-engineering planning approach, and attention is given to processes as well as contexts and objectives of strategies (Allmendinger, 2002; Wiechmann, 2008), but these do not provide the needed specificity to analyse energy issues. Another research strand examines low-carbon transitions at the city-regional and urban scale, mainly focusing on multi-level governance settings and the re-structuration of established forms of urban policies (Bulkeley, 2010; Hodson & Marvin, 2010, 2012). These studies deal with energy governance and the assessment of strategies, but do not address the processes of strategy development.

A discussion of energy strategies' development and evolutionary contexts is nearly missing. Given their importance for our times, this article concentrates on the issues mentioned above, and substantiates it with empirical findings from a case study in Greater Manchester. This focuses on the development and importance of two documents: the Association of Greater Manchester Authorities' (AGMA) "Decentralised and zero carbon energy planning study"—CEPS (AGMA, 2010a)—and the "Sustainable Energy Action Plan"—SEAP (ARUP and Manchester: Knowledge Capital Ltd., 2010)—which together are the core documents that set out the future development of renewable energies for the Greater Manchester Region.

But rather than examining particular attributes of strategic development, the general regional governance system, or the wider multi-level organization of the low-carbon transition—what Hodson and Marvin (2010) provided us with for the case of Greater Manchester—this article focuses the contexts of energy strategies: the arrangement's evolution, and the roles of regional institutions and actors within energy development processes. The guiding question for this attempt is: How did the governance arrangement for energy evolve? Broken down into smaller parts, we ask: What are the specific actor constellations and institutional environments for the development of a regional renewable energy strategy? What impacts do institutional rules have on this development? What strategic discourses exist? How do actors in the process of strategy-creation behave? To answer these questions, the article unfolds as follows: first, the theoretical aspects of regional strategy development and regional governance are briefly addressed. This includes the aspects of evolution as well as a discussion on the role of institutions and actors in and for regional energy strategies. Additionally, we present an approach for analysing regional strategy development, including the methodology of the field study. Second, we discuss the evolution of governance in Manchester and how it relates to energy governance—based on the aspects mentioned in section Theoretical Background: Cooperative Development of Regional Energy Strategies. Finally, the key findings are stated and general lessons from the study are outlined.

Theoretical Background: Cooperative Development of Regional Energy Strategies

This section gives an overview of and combines the current state of the art of the following aspects: the evolution of regional arrangements for regional energy strategies, the roles of institutions and actors in and for regional energy strategies, and a way for analysing regional strategy development.

Evolution of Regional Arrangements for Regional Energy Strategies

The development of a regional strategy generally demands either regional cooperation or top-down decision-making. Since energy development in the European Union (EU) is deeply embedded in supranational and national legislations, regions are facing various regulations. At higher levels of political control and administration, adequate instruments for strategic steering are usually lacking, hence regions are tasked with development policies. The multi-level, networked situation has at the local and city-regional scale been "found to be critical in shaping the capacity and political space" (Bulkeley, 2010, p. 21). This is due to the fact that all territorial governance approaches are under the constant pressure of realignments in spatial politics and institutions. Therefore, the

institutional infrastructure of space-related politics has to be systematically reconfigured (Gualini, 2004). Furthermore, the softening of regulatory systems leads to reductions in the intensity of monitoring, which can increase the (unanticipated) influence of third-party actors, as well as empower them to participate in development processes. "Official" power relations tend to be modified by informal power structures (Fürst, 2006). This is especially important for energy infrastructures in Europe, since the setting of the energy market has fundamentally changed over the last years due to its liberalization, privatization and commercialization, as well as the push for renewable (and decentralized) energies.

For regional energy policy-making, Monstadt (2007a) identifies three major socio-spatial changes that affect the organizational structures: First, the developments of new markets and processes of ecological modernization lead to new economic interrelations and to new economic space and scale relations within the energy sector. This demands for (territorial) policy realignments that can support and deal with these changes. Second, the regional energy infrastructure and related investments significantly differ among regions. Hence, regional policy-making is facing challenges such as security of energy supply or competition with other regions for investments. Strategic orientation and procedures that interlink political, economic and technical consultancy can help to address such challenges if they follow a multi-level approach, and promote cooperation among actors from public, private sector and civil society. Third, national states increasingly cede their competences for energy policy to the European level. Therefore, local and regional energy strategies get more and more important to reflect specific situations and needs for future development.

Several authors observe such a tendency towards regional alignment of political initiatives in the light of the deregulation of the European energy market (Monstadt, 2007b; Trink *et al.*, 2010). Such bottom-up movements can be explained by local needs of single municipalities, which cannot guarantee the fulfilment of specific tasks and therefore demand for inter-municipal cooperation (Kleinfeld, 2006). These changes illustrate the necessity of cooperation and new decision structures within an increasingly liberalized setting. Nonetheless, the ability of a governance arrangement to solve problems is highly dependent on the willingness to cooperate, the social capital of the participating actors, the issues, the negotiating skills of moderators and the institutional framework (cf. Fürst, 2006; Kleinfeld, 2006). Thus, it is especially important to establish a governance structure that takes regional histories, characteristics and distinctiveness into account. For energy, these demands exemplarily lie in inter-municipal coordination of planning documents with respect to the future energy supply or in the discussion of different land usages (e.g. farmland for food or agro-crops). Therefore, energy issues have a strategic character that demand political and organizational responses at the regional scale (Hodson & Marvin, 2012).

The Roles of Institutions and Actors in and for Regional Energy Strategies

For the analysis of strategic governance arrangements, the most important dimensions are: institutions and actors, their constellations and patterns of interaction. According to the concept of Actor-Centred Institutionalism (Mayntz & Scharpf, 1995), institutions build the framework for actors, their constellations and modes of interactions. Actors influence the constellation, which forms the basis for modes of interaction. Interactions lead to

decisions, which, after implementation, modify the situation, in which actors work and which influences the actors.

In the energy context, institutions, as the regulatory framework, comprise formal, judicial and social norms that affect the energy market. These are constituted deliberately and can be modified by the actions of concrete, identifiable individuals. Nonetheless, in regional contexts, several institutions are not changeable (e.g. higher level legislation or strategic orientation—EU, national; generally perceived and widely accepted patterns of development, such as globalization or low-carbon futures). Hence, strategy documents for regional development have to reflect on superior institutions, the specific context, and give guidance on institutional design and capacity building in order to face the energy challenges (cf. Bulkeley, 2010; Healey, 2002).

Actors can generally be differentiated by means of their activity orientation, which is reflected in actors' perceptions and preferences and influenced by learning processes and arguments. The energy market comprises all actors, which develop, use, support or in any way profit from the energy system (Monstadt, 2007a). To a certain extent, their orientation is shaped institutionally and partly determined by the context-independent individual characteristics of the institutional framework, such as socialization or their own history (Mayntz & Scharpf, 1995). Typical motivations for actions in the energy sector are power, control and room for manoeuvre regarding investments, spatial decisions (e.g. infrastructure locations) or technical structures (e.g. forms of energy utilization) (Monstadt, 2007b).

The actor constellation describes the participating actors and their strategic options and outcomes. The constellations vary in terms of the number of actors involved and in homo- or heterogeneity, as well as in the resources of the actors (Schimank, 2007). In the energy sector, this mainly encompasses expertise from actors dealing with topics such as planning, environment, economy or sustainability: politicians, public servants, consultants, employees of utility companies, non-governmental organization (NGO) representatives or academics (Hodson & Marvin, 2010). Generally, none of the parties can take decisions on the basis of its own preferences, perceptions and action resources. They are always interwoven as well as reflecting the institutional framework. How actors consciously or unconsciously decide on their own mode of interaction depends on the actor constellation, the orientations of the involved actors and organizations, and the institutional framework (Mayntz & Scharpf, 1995).

To sum up: the mutual development of a strategy is like taking a path to reach fundamental goals, which are dependent on the aims and objectives of the collaborating actors—under consideration of institutional frameworks (Wiechmann, 2008). Or, as Tewdwr-Jones *et al.* (2010, p. 252) put it: "Spatial strategy making is expected to become a collaborative tool of public services and policy development, [...] while being stretched across several tiers of government and owned across state and non-state agents of governance". For the strategies themselves this illustrates their dependency on the context—in terms of institutions, actors and their behaviour and discourses. The following subsection introduces an approach for the analysis of such settings.

Analysing Regional Strategy Development

In order to analyse the development process of a regional renewable energy strategy, it is important to take its evolution and the roles of actors and institutions into account.

Wiechmann (2008) created a model for strategy development analysis that builds on contexts and behaviours. Enriched with considerations on energy this model gets fruitful for the purpose of this article.

Within the model (Figure 1), it is possible to analyse the preconditions for the evolution of strategies and to address the question of their implications on the regional development processes. The model comprises five elements. The strategic concept provides a reference framework for the actors involved and defines objectives for the region. The institutional context reflects the regulatory system that structures the courses of action within the region. For energy processes, a multi-level dimension has to be added that reflects the outlined embeddedness and co-evolution of energy processes. The strategic discourse identifies informal exchanges among regional actors concerning the strategy's contents and actions relating to the latter. The autonomous strategic behaviour comprises all activities and interactions of the people involved that are not motivated or caused by the regional strategy. The induced strategic behaviour includes the actions and interactions that are intended by the strategy. The different elements interrelate to and affect each other (Wiechmann, 2008, pp. 163 ff.), but a closer examination of this fact is not necessary for our purposes.

Some process elements are mainly influenced by external "factors" and, therefore, are less influenceable through the process of strategy development, whereas others are more influenceable. Hence, some external measures delimit the model's explanation capacity; for example, the strategic discourse is influenced by various elements that lie outside of the model. But nonetheless, for the article's purposes it is a useful framework.

In order to analyse the development process of a regional renewable energy strategy in Greater Manchester, a methodological approach is appropriate which includes two elements: first, the examination of official articles as secondary data within a document analysis, and second, expert interviews as primary data and information, which provide

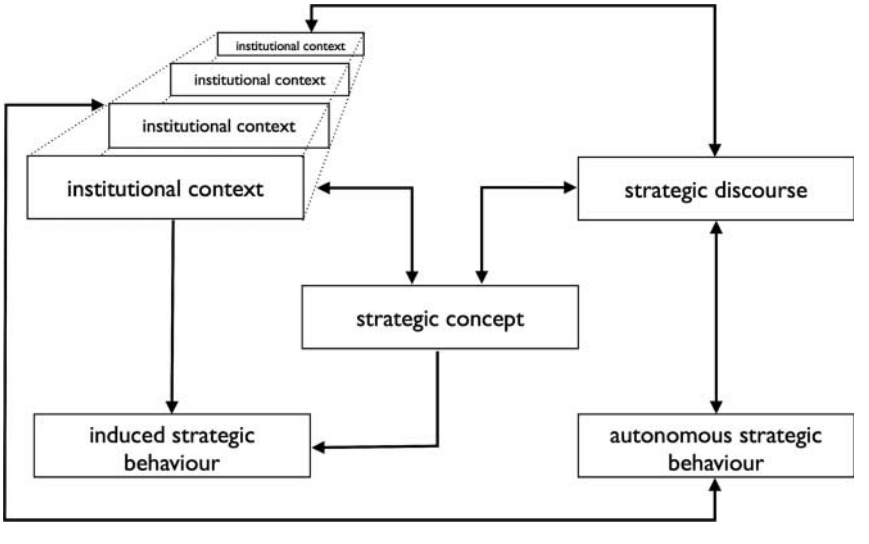

Figure 1. Process model for analysing energy strategy development.
Source: illustration by author; based on Wiechmann (2008, p. 160).

deeper insight into the strategic development, actor constellations and the strategic processes. For the study, a total of 128 policy and strategy documents from the local, subregional, regional, national and European levels were analysed using qualitative content analysis (Mayring, 2004). It is important to note that documents are always dependent on their development context; they are always a result of a complex process of coordination among different actors and institutional settings. Furthermore, their content and context is subject to interpretation by the reader (Prior, 2003). Semi-standardized, face-to-face experts' interviews were held with nine experts from regional agencies (interviewees I1, I2, I3 and I5), city administrations (I6a, I6b and I7) and academia (I4a and I4b)—the latter in their second function as consultants. All of them are or were actively involved in the development process of energy strategies in Greater Manchester. The goal was to deepen the understanding of the development process and gain insight from different levels, and to confirm findings from the document analysis, or highlight contradictions. The status of data and the relevance, origin and context of single statements are considered critically during the analysis (Silverman, 2000). In comparison, documents can be understood as more convenient sources of data, whereas interview statements are more polarized and considered. Hence, documents and interviews are not identical sources and must be handled in different ways as either official, carefully considered statements, representing the consensus view or as more spontaneous, individual statements.

Greater Manchester as a Regional Laboratory for Renewable Energies

Greater Manchester in the North-West of England is a formally established city region consisting of the 10 local authorities of Bolton, Bury, the City of Manchester, Oldham, Rochdale, the City of Salford, Stockport, Tameside, Trafford and Wigan. Its roots go back to Greater Manchester City Council (GMCC), founded in 1972 and abolished, as all English city councils, in 1985. On 1 April 2011, Greater Manchester Combined Authority was established for the city region, consisting of approximately 2.5 million inhabitants, contributing approximately £46 billion to GDP, ranking first in the North and seventh among the UK NUTS2 regions (National Statistics, 2009).

The city region is characterized by the transformation from an industrial powerhouse to a knowledge-based economy. Two hundred years ago Manchester was arguably the first global city, where suburbanization occurred for the first time and the textile industry established the first large-scale production plants. With the disappearance of the manufacturing industry in the middle of the twentieth century, the city region experienced heavy economic and social decline and many people left the area (Shrinking Cities Project, 2008). Greater Manchester has since developed to once again become the economic centre of northern England. For example, in 2011 the BBC moved its headquarters and several offices to MediaCityUK in Salford.

Alongside the transformation into a city region dominated by the new economy, a low-carbon economy agenda has been established in Greater Manchester as a carbon abatement programme. The designation as first Low-Carbon Economic Area in the country gave momentum to future sustainable economic development that aimed in particular at investment in low-carbon economies and productions. This step can be viewed as a means of promoting economic development with positive effects in terms of reductions in carbon emissions. The Greater Manchester Energy Group (GMEnG) has stated:

> If Greater Manchester can develop an efficient, low carbon energy system this will support economic growth and pave the way for Greater Manchester to be recognised internationally as an innovative City, second only to London in the UK for economic success and sustainable development. On the other hand, an energy system that cannot rise to these challenges could constrain future growth, worsen the affordability of energy and social divisions, and damage the competitiveness of the economy. (GMEnG, 2010, p. 1)

One major aspect of this transformation is the increased and widespread use of renewable energies in Greater Manchester. In 2005, less then 0.1% of the total energy demand and only 0.6% of the electricity production in Greater Manchester resulted from renewable energies (GMEnG, 2010). The European target of reaching 15 percent by 2020 in England demands a transformation of the energy system in the city region. Therefore, the CEPS was developed that partly built on insights gained from the SEAP. The evolutionary context of both documents is the subject of the following section, comprising the genesis of the governance arrangement and the short-term history. Afterwards, we discuss the impacts of institutional and actor constellation on the strategic development of the energy.

Evolution and Strategic Consequences of Energy Planning in Greater Manchester

For the current developments in Greater Manchester's energy planning, the governance arrangement is a very important aspect in terms of strategic orientation; different state and non-state actors contributed to the finalization of the two most important strategy documents, the CEPS and the SEAP. The CEPS was prepared for AGMA by URBED, AECOM and Quantum Strategy and Technology, which all are international consultancies. The idea to conduct the study resulted from the desire "to provide an evidenced based understanding of local feasibility and potential for zero and low carbon energy technologies and delivery of zero carbon developments across the City Region" (Babb, 2009, p. 2). The evidence base should consist of, on the one hand, a top-down analysis of the strategic potential and, on the other hand, a bottom-up analysis through case studies (AGMA, 2010a). The SEAP was a very important part of this evidence base. It was developed for AGMA by Manchester: Knowledge Capital, a non-profit company under the auspices of universities across Greater Manchester and the Cities of Manchester and Salford, and Arup, a multinational consultancy. Funding was provided by the European Commission's "Partnership Energy Planning as a tool for realizing European Sustainable Energy Communities" programme.

The CEPS' main objectives and deliverables are manifold. First, new information on the status quo of renewable energy potentials within the city region are provided. Second, concrete CO_2-reduction targets are set. Third, potentials for carbon-neutral developments are outlined. Fourth, an adequate energy mix for Greater Manchester is identified. And fifth, practical options and policy recommendations for a future energy infrastructure are developed. The SEAP addresses local and city-regional decision-makers—local authorities and AGMA. It provides them with new evidence on CO_2-reduction targets and specific actions. Changes and actions likely to occur outside Greater Manchester's sphere of influence are taken into consideration as well as goals set by local authorities and national government. For both aspects, the SEAP identifies relevant actors and implementation timescales and

includes concerns about energy security and affordability. By that, it deals as comprehensive report that helps "to inform and help shape energy priorities in Greater Manchester", as the subtitle states. Before this article offers a closer analysis of the documents, the focus in the following subsection shifts towards the emergence of the city-regional governance framework for energy.

Genesis of a governance arrangement for energy. The evolution of the governance arrangement in the city region can be understood as a complex of different aspects. On the one hand, path dependencies in terms of the historic development of the city region (GMCC) were essential. The 10 local authorities developed first planning documents mutually in the 1980s. Via this top-down structure, practical knowledge and experiences was generated and shared, on which the parties build on for their cooperation. Energy planning at this time was seen as a technical problem, rather than a strategic.

After the GMCC's abolition, both the need for individual interests and actions at the municipal level and common problems and patterns of interpretation created a demand for institutionalization and management within the region of Greater Manchester. Therefore, in 1986, the local authorities mutually decided to set up AGMA, the AGMA, as an umbrella structure for the regional development. With the help of AGMA, new networks of decision-makers came up, connecting different actors on equal terms: municipalities, political parties, associations, trade unions and business (Jessen & Walther, 2008). "[C]appuccinos and designer cakes at meetings in café-bars replaced luke-warm tea and biscuits at the Town Hall" (Peck & Ward, 2002, p. 13). While the quality of the food improved and new modes of cooperation evolved, there still were no formal regulatory frameworks or institutions to support emergent social relations (Deas & Ward, 2002). Energy still was not of greater interest.

The governance situation changed fundamentally in 1996. The IRA bomb attack destroyed a large part of the inner city. The reconstruction of this important urban space led to a new approach to urban development that addressed the challenges faced. The major players were brought together, such as retailers, associations and the council, and they together developed a strategy for the procedure and financing of reconstruction (Jessen & Walther, 2008).

The bid for the 2000 Olympics was the second key moment in the establishment of a broader, institutionalized governance structure in the region. Several elites from culture, business and politics created a network with the aim of securing Greater Manchester's future and starting the application process—and the city administration of Manchester voluntarily gave up its dominant position (Peck & Ward, 2002; Robson, 2002).

Since the beginning of the new century, the changes in governance have been accompanied by the overarching framework of development in the region being branded as low carbon. The designation as a Low-Carbon Economic Area was intended to position Greater Manchester in the economic competition with London as a region combining economic and ecological interests. To reflect with this label, new governance structures were given a high significance. Energy, for the first time, was mentioned as strategic interest and important objective for the future development of the city region. The still urgent need for further institutionalization was faced in 2010: the 10 local authorities passed a constitution developed under the umbrella of AGMA.

The whole evolutionary history can be understood as a bottom-up approach to development, with an impetus given by the disappearance of top-down structures.

The topic energy is currently intensely debated in the city region. Within AGMA, two relevant bodies appear as corporate actors: the Planning and Housing Commission (PHC) and the Environment Commission (EC). In both bodies there are several individual actors working together, who originate primarily from local authorities and from other AGMA boards or state authorities, supplemented by some academics, members of NGOs and private companies. The role of the non-state, third-party actors basically is to deliver expertise and data on regional development. Especially the two consultancies Arup and URBED are major partners. They are involved in the development of many different (energy) strategy documents at different administrative levels in Greater Manchester and, thereby, definitively are influential.

The PHC developed the Greater Manchester Spatial Strategy (GMSS) as framework for regional development and coordinated actions regarding this document. For the energy documents (CEPS and SEAP) the GMSS is important in terms of framing collaboration, and setting spatial priorities for delivery and investment. Beside the GMSS, the PHC decided to draft and supervise the development process of the CEPS. Furthermore, the PHC is in charge of harmonizing local authorities' development documents.

The EC has to align the strategic documents to environmental goals and develop and provide a governance pathway for all authorities, organizations and groups in the field of environment. Additionally, it is in charge of the development of a strategy management system, to react in effective ways to the challenges of climatic change (AGMA, 2010b). Furthermore, an EC decision leads to the development of the SEAP.

In spring 2010, both commissions jointly established the GMEnG, which "is responsible [. . .] for strategic oversight, challenge and championing of energy issues within the city region" (AGMA, 2010c, p. 4). The process of the GMEnG's creation illustrates that already the studies' drafts unfolded far-reaching influence.

Mid September 2009, drafts of the SEAP and the CEPS were presented to both commissions: to the EC by Sarah Davies, the head of strategy and programmes, and to the PHC by Peter Babb, the director of the Urban Planning Office in Manchester and a lead member of the studies. One core element of both documents' drafts was the aspect of coordination that was highlighted by the presenters (AGMA EC, 2009; Babb, 2009, p. 4). Babb and Davies suggested a structure for a cross-commission Energy Group, comprising the purpose, priorities, membership and governance arrangement for the future handling of energy issues. The commissions accepted the proposal and voted for the establishment of the GMEnG.

With the foundation of the GMEnG, the institutional development process of regional governance structures for energy in the region of Greater Manchester has reached its highest point yet but remains unfinished. The next subsection discusses the emergence of energy-related documents out of this governance framework.

Development of strategy documents—CEPS and SEAP. In 2008, the AGMA executive committee noted a lack of expertise on energy topics. Therefore, it "proposed to commission the advice of consultants over the next six–nine months to provide AGMA with the commercial insight needed to inform this work and build in-house capacity for the future" (AGMA ExC, 2008). Subsequently, the SEAP and the CEPS were brought up in the Environmental and the PHC, and each of them decided on the inclusion of external partners.

The SEAP, commissioned by AGMA's Environmental Commission, got additional impetus from an EU initiative: the Covenant of Mayors. This movement aims at involving

local and regional authorities "to increase energy efficiency and use of renewable energy sources on their territories" to reduce carbon emissions by 20% by 2020. Since all Greater Manchester authorities joined this initiative, they were "forced" to create a SEAP, including an implementation report. In exchange they got technical assistance and financial benefits from the European Commission. Furthermore, within a draft of the Greater Manchester Spatial Framework, AGMA stated "strategic priorities for energy planning at the GM level [. . .] could be taken forward in a Sustainable Energy Action Plan" (AGMA, 2010c, p. 4). To that point, the development of the SEAP was already commissioned to Manchester: Knowledge Capital and Arup. The whole processing of this plan pretty much took place behind the scenes within the consultancies, and interview partners could not give information about its emergence. Therefore, a closer analysis of SEAP's development is not possible. One effect of it can be found in an EC minute from May 2010, where the future usage of SEAP is defined as:

> A robust basis for taking forward the outputs of the Sustainable Energy Action Plan, and developing a robust portfolio of projects and programmes to improve Greater Manchester's Energy System based on progressing the actions of the GM Energy Group, and developing existing separate work packages into a GM Energy Plan. (AGMA EC, 2010)

The CEPS was conducted on behalf of and mainly by the PHC. The development period of the CEPS was from November 2008 to March 2009. A summary was published as first public document in June 2010, shortly before the study itself. The time gap between completion and publication may be explained, as one interviewee from a local authority stated, by "bureaucratic issues" and "wealth of data" (I7). Furthermore, British energy planning policy started to evolve around 2010, what faced local and regional actors with new national demands.

The significance of external parties for the development process is apparent, given the fact that the drafts were primarily informed by consultants' expertise (CEPS) or even compiled by them (SEAP). Local data were needed for the completion of the study. And at local level in Greater Manchester, half of the studies dealing with energy are compiled by consultancies: one by Quantum Strategy and Technology (Rochdale) and four by AECOM (Bolton, Bury, Stockport and Tameside). Hence, private companies strongly influenced the development of the CEPS through their local engagement; third-party actors contribute to the strategy's development within a partly informal—or at least hidden—power structure.

A representative of a local authority described this, referring to the CEPS, as being problematic, because

> the way that study was going wasn't really clear to me [and] the way [it was written] and the structure of it didn't to me immediately spring out clearly, as to what a policy should do and what it should say and what it should address. (I7)

A major reason for this lies in the processing of the study itself. This was explained by the person in charge for compiling the CEPS behind the scenes and for bringing together the actors and information like this: public servants, working as secondments for AGMA, put in their local expertise and knowledge to take specific local needs at the regional scale into

account. Nonetheless, they focus on the needs of Greater Manchester. Additionally, they consult experts for energy and spatial planning; in future, these consultants will be contracted for training planners that are working for the local authorities (I5). In the light of a mainly positivistic and less self-critical interview, this explanation apparently contains one lesson learned: it is favourable to compile a regional energy strategy without external expertise, but use consultants for training. Nonetheless, external input was important for compiling the CEPS.

After the publication of both studies in the middle of 2010 the PHC discussed the possible handling of the findings. The commission members decided to create an implementation framework for further documents and that the studies, especially the CEPS, should serve as basis for the Greater Manchester Spatial Framework and the Core Strategies (CS) of the local authorities (AGMA PHC, 2010). This illustrates how AGMA as regional organization tries to exert influence at the local level by producing documents that affect them. A further investigation of this influence will follow now, pointing at the impacts of the specific actor constellation and institutional settings and rules, as well as ongoing strategic discourses and connected behaviours of involved actors.

Impacts of Institutional Settings and Specific Actor Constellations on the Regional Energy Strategy

The evolution of energy planning and its governance structure in the region of Greater Manchester has specific consequences for the mutual and individual working. With reference to the process model outlined above, these can be differentiated into (i) the effects of institutional rules, (ii) the strategic discourse related to the documents and (iii) the strategic behaviour of actors.

Effects of institutional rules. The effects of institutional rules on the strategic energy development process basically lie in their ability to support the working progress. They achieve this either through the structuration of processes or by giving opportunities for self-organization. Even though these rules are not specifically created for energy planning, they are important to understand processes in that field.

The institutional framework of AGMA imposes an obligation of compliance on its signatories, which are the 10 local authorities. By that, the formulated targets of the two energy studies enfold their relevance. The norms and rules refer to tasks in a distinct area and are territorially aligned. Furthermore, the rules set in the constitution are binding on all parties, who are involved into the structures of AGMA. This is not due to legal or statutory provisions or guidelines, but rather due to voluntary embeddedness and participation in panels, in which the actors integrate the institutional framework of AGMA into their own activity orientation. This is outlined by the commitment to the regional framework as well as its adoption into local strategies, projects, etc. Since the energy documents are created under the umbrella of AGMA, their prominence for energy development is visible for all AGMA members.

For the signatories to the constitution, the institutional energy framework has binding force. A municipality representative remarked on that point:

> From a Manchester strategy point of view we have to align with what's happening at that level, obviously. Because otherwise, if we're trying to do stuff differently, we

> won't get funding, we won't achieve, what we need to achieve. So we do have to align. But all the time we do need to be aware of the uniqueness of [our municipality]. (I7)

The institutional rules do not necessarily have direct impacts, but especially financial regulations can set requirements directly. However, the effect of documents is indirect. For example, the CEPS is "not a binding report, no. But it's good evidence. We said we can do what we want. We can ignore everything" (I6b), as one interviewee stated. This means that there is no obligation to follow strategic statements. However, the intense laughter of the interviewee following that statement—which we experienced as being a sign of insecurity or internal contradictions—may indicate that while decisions taken by AGMA can theoretically be ignored, in practice this is not a realistic option.

Strategic discourse. The strategic discourse comprises informal exchanges among regional actors concerning the strategy's contents and actions. It reflects on the multi-level dimension of energy policy. For the territory of Greater Manchester, in the past decade, a number of strategies were developed, which deal in some way with the subject "energy" (Table 1).

The multi-number of documents at different political scales is a result of higher level demands that the local and city-regional level have to take into account. Another aspect is that the strategies and studies cover different time horizons and scales, but, nonetheless, relate in content, and to each other. Together, this results in a high degree of complexity within the region, in particular for implementation, and in addition to the emergence of a strategic discourse. This is especially problematic for the local level, because the required specificity is missing. A local authority representative mentioned regarding the CEPS that it "confused us a lot. Sometimes we really were like: What does that mean? It's very detailed. Sometimes it's complicated to understand" (I6a).

The strategic discourse within the documents in Greater Manchester itself is perceived by interviewees as highly intense, what several statements illustrate: "studies building on the AGMA study at a Greater Manchester level" (I7), and "you've got a political push coming from below, to plan coherently on the city region scale. [. . .] Manchester is now effectively pushing for some arrangements [. . .] to provide a coherent framework for the rest of the region" (I1).

Between different planning levels, a discursive exchange of knowledge and information can be observed. The main aim is to find a coherent direction and orientation for energy development. A challenging factor within this process is the number of actor groups that are involved in the topic. For the first time, in the recent past, a process of exchange was initiated:

> On the energy side, the environment commission does some aspects of it. Planning has a big role to take. We've been doing also work on that. The Commission for the New Economy have a role by creating various skills on the business side of the energy. Energy shot into [. . .] to be a crosscutting issue. (I5)

This exchange is accompanied by discussions of strategic elements. In relation to the national level, an interviewee stated that

Table 1. Strategic documents on renewable energies from different political scales

Political scale	Strategic documents on renewable energy	Main content regarding energy
UK (Government)	"The UK Low Carbon Transition Plan. National strategy on climate and energy"	Targets (mainly CO_2 reduction) that also address Greater Manchester
	"The UK Renewable Energy Strategy"	Subsidies for different renewable energy technologies (advantaging effect)
	"National Renewable Energy Action Plan for the United Kingdom"	Regulations set by the Office of the Gas and Electricity (advantaging effect)
Sub-national (development agencies "North West Development Agencies—NWDA" and "4NW")	"North West of England Plan. Regional Spatial Strategy to 2021", later "RS 2010" (abolished in 2010)	Energy development goals
	"Future Northwest" (current)	Implementation framework
Greater Manchester (AGMA)	"CEPS"	Renewable energy data
	"SEAP"	CO_2-reduction targets
		Potentials for carbon-neutral developments
		Energy mix
		Practical options/policy recommendations
		Implementation timescales
Local authorities	"LDF"	LDF: overarching development goals
	"CS"	CS adds spatial dimension to the LDF
		Why change, what should be done by whom, where, when and how it is going to be implemented

> The cities, in some way, are trying to anticipate national priorities. As a result there are multiple national priorities, so if you look at energy policy in actual context, there's only a couple of years ago that we again had a department for energy in the UK. We have not had one for the best part of 20 years almost. And energy policy was across the department for the environment, the department for business, the treasury. You know, so, across a number of different departments, each with a different lens on what energy policy was, what energy priorities are. And the city region, by trying to anticipate that, starts to pull down on these different priorities, the different sets of resources that go with them. And then you get this mixture of strategies [...], which ... sometimes they are right and quite interesting, but what they adapt to and what they realise tangibly, they are often ... (long pause). (I4b)

The strategic discourse between Greater Manchester and national guidelines reflects the persistent tension between different national departments. The region attempts to

anticipate developments and react to them at an early stage. Nonetheless, the interview section illustrates the shortcomings of implementation at the regional level that originate in the specific kind of the strategic discourse: complex regulatory structures at EU and national level and changing political landscapes.

At sub-regional scale, even though Future Northwest has no formal status, it gives evidence for energy development in Greater Manchester. Actors from the city-regional level were involved in the development of Future Northwest and therefore, this document influences city-regional decision-making mainly through an exchange of knowledge.

With respect to the local authority level, the energy question is one of the most debated in their documents, since all local authorities in Greater Manchester either just finished or still are in the process of renewing their local development framework (LDF) and CS, and have to take frameworks from different levels into account. The influence of consultants is important, too, here in terms of content. An interviewee from a commune stated: "And because AECOM actually did our study, where some of the people were working on the decentralised energy study for AGMA, our study gave them an opportunity to refine some of their ideas, as well" (I7). Strategic discourse influenced in both directions: from the city region to the local level, and vice versa. Especially here, we can identify strategic behaviours that will be analysed in the following subsection.

Strategic behaviour of actors. Impacts of the regional governance arrangement on the energy transition in Greater Manchester can additionally be "measured" in terms of significance and, thereby, effects at the individual scale. These can be differentiated into autonomous and induced strategic behaviours.

Autonomous strategic behaviour is poorly developed in Greater Manchester. The regional strategy for energy was widely accepted and adopted as the basis for local work. For several local authorities, even those producing their own documents, the regional articles have been very important, either as blueprint for local strategies and plans, or as direct input for several indicators used in the documents. This shows how regional strategy development can both simplify and guide the work at the local level, once a certain degree of institutionalization, cooperation and familiarity exists.

The effects of different national and regional strategies on the processes of AGMA are, however, less pronounced. The behaviour at the regional level is more autonomous, as shown by a statement by a PHC member: "we are working to our own targets to reduce energy by a certain percentage. [...] So we're pushing developers to achieve those levels anyway" (I5).

The region sets itself goals, pursues them in strategic documents—independently developed from national guidelines—and attempts to play a pioneering role in the fields of low-carbon and decentralized and renewable energies. The parties try to implement individual measures before national incentives are established. Thus, at the regional level, autonomous strategic behaviour is a distinctive characteristic of Greater Manchester, in contrast to the local level.

The corporative actors that join together in, for example, AGMA, demonstrate, with respect to AGMA, tendencies towards induced strategic behaviour. Above all, the CEPS is seen as the most important document, as is mentioned by several interviewees:

> I suspect if we didn't have this (AGMA-study), then, you know, we would be way behind. [...]. The AGMA study has really helped. Helped focus our minds onto the issues, hasn't it? (I6b)

> AGMA certainly [gave us a framework], yeah. And we wouldn't have [our] study done as quickly without all the work that AGMA'd done. (I7)

Furthermore, the process of strategy development at the regional level provided the initial impetus for the structured preparation of energy-related documents in the region. Through AGMA's activities in the field of renewable energy, local authorities were informed about the relevance of the issue and began to commission studies and develop their own strategies. However, there was a national demand for energy planning—an external requirement on the municipalities, which AGMA almost accidentally anticipated.

At the structural level of AGMA, the CEPS delivers evidence for further strategy development processes and triggers internal strategic compliance. To what extent single measures or strategic steering are reflected at municipal level cannot be assessed at present, as the studies have only existed for a relatively short time. Further research is required to assess the specific affects of the documents at the municipal level.

Another dimension of actors' strategic behaviour lies in its orientation. Especially the CEPS argues in some parts for challenging re-structuration: visually invasive developments (e.g. tall wind turbines in every open space above a certain size), costly solar panels as cladding materials on the side of every new buildings, or biomass-based cogeneration in every new building above a certain size. These strong recommendations would surely have been significant public backlash and hence policy-maker focus that would have resulted in very different stakeholder interactions. The fact that this did not occur probably means that the CEPS was rather modest and incremental in its orientation and outcome, and required little negotiation between stakeholders.

Lessons from the Case Study—Conclusion

Over the last years, the steering of renewable energies' development gained greater importance in both, academic discourses, and planning and policy-making. The development processes for energy strategies were, nonetheless, hardly addressed in scientific examinations. In this article, we analysed the evolutionary dimension, and the roles of actors and institutions in energy strategy development processes, to enhance the understanding of energy transitions. The case study of the city region Greater Manchester provided an exemplary insight, because the development process of a strategic framework has just been finished and city-regional actors are now beginning to implement first measures. The model for analysing regional energy development proved a useful framework for the analysis of these elements. It enabled us to (1) identify the different levels of governance, (2) highlight the interactions between them and (3) add an evolutionary, process-oriented view of the development process

First, we discussed, how regional governance structures help to pave the way for a decentralized energy supply structures. In a multi-level and networked framework of energy policy, spatial politics have to be realigned to meet the specific regional challenges. This can only be achieved if strategic cooperation and orientation is in place, as various articles showed (Bulkeley, 2010; Davoudi *et al*., 2009; Frommer, 2009; Tewdwr-Jones *et al.*, 2010; Hodson & Marvin, 2010, 2012; Monstadt, 2007b). In the case of Greater Manchester's regional strategies for renewable energies, the demand for coordination at different scales, in different modes and in changing patterns of collaboration can be seen as key factors. The development of the city-regional strategy for renewable energies resulted

from pressures of realignments in spatial energy politics and a demand for new institutions. Especially the joint establishment of a new commission focusing solely on energy issues (GMEnG) was, on the one hand, a milestone for the agenda setting, and on the other hand, an expression of the actors' perception of energy challenges and the need for institutionalized forms of approaching energy challenges.

Second, we analysed the impacts of the specific actor constellation on the strategy development process, and how strategic discourses and behaviours influenced it. Actor-centred institutionalism (Mayntz & Scharpf, 1995) therefore provided an approach to conceptualize the overarching situation, comprising institutions, actors and interactions. For the action orientation of regional parties, the general energy policy and context at EU and national scale is of greatest importance (Bulkeley, 2010; Healey, 2002). But for gaining power, control or room for manoeuvre, actors develop their own strategies to influence regional decision-making (Hodson & Marvin, 2010; Monstadt, 2007b; Schimank, 2007). In Greater Manchester, as of today, the involved actors not only collaborate, but also mutually influence the development of the regions' energy strategy. Although the historic circumstances are very important factors, several other factors can be identified which contributed to the development of an energy strategy in this specific case. Within a broader perspective of the contexts of strategic decision-making and the role of regional institutions, organizations and actors these are:

- A mutual approach to development problems: The involved actors agreed early on compiling strategies for the energy transition (CEPS, SEAP) to have orientation for the further development. The inclusion of consultants' expertise was a common basis.
- A shared vision for the region: The overarching development goal to become a low-carbon economic city region enabled the parties to follow a mutual path, where renewable and decentralized energies built an important part.
- A jointly developed regional strategy: The strategy was compiled by a city-regional institution, informed by consultants' expertise. Most of the information for the city-regional scale came from or built on local data that were provided by the different local authorities. Therefore, within the city region a feeling of working together on the strategy evolved.
- Awareness of the need for coordination and cooperation among different policy levels: Energy is a highly politicized sector, regulated and influenced by EU and national policies. At the same time, it is a fundamental element of local economy. The actors in Greater Manchester, from different organizations at local and city-regional level as well as organizations, reacted to this particularity and (a) coordinated strategic contents at the city-regional scale, (b) analysed spatial potentials for utilizing renewable energies, (c) combined a regional time frame with specific goals and (d) set out implementation horizons for the local scale.
- A clear structure for development issues: The systematic institutionalization of, and the development of rules for cooperation, negotiations and financial issues in the city region provided the actors with a clear structure for their tasks that generally helped to approach energy issues.

Possible threats to the implementation of a renewable energy infrastructure, as observed in Greater Manchester, are the over-economization of development processes, the roots of which lie in the historic development of the city region as an economic powerhouse, and

which is, for example, still reflected in the designation as a "Low-Carbon Economic Area". As soon as short-term profits override long-term cost savings and ecological concerns, investments in renewable energies are unlikely. Furthermore, the regional governance arrangement in Greater Manchester mainly consists of representatives from AGMA and local authorities, plus some business elites. Hence, the integration of the civil society and knowledge of NGOs into the strategy development process is limited. AGMA has a dominant position in relation to the definition of energy goals, which may, in the long term, offend local authorities due to their reduced autonomy to find specific local solutions for specific local problems. The role of business partners and consultants can result in legitimization problems, hidden agendas and informal power structures. The integration of a wider range of actors could improve the legitimacy, authenticity and feasibility of the strategy, because, as argued by Pütz (2004), the individual abilities of actors are important to the arrangement outcomes.

To conclude, and briefly and concisely generalize this: if the issues mentioned are taken seriously, the integration of a regional governance structure into the strategic development process can achieve a substantial qualitative improvement for the development of a regional energy strategy—and thereby in the shift to renewable energies. For further academic investigations it may be fruitful to put more emphasis on elements such as power relations among different actors, the impacts of individuals' decision-making and practices on strategic developments, or the attribution of meanings to spatial categories and derived action responses regarding renewable energies implementation.

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