# Cities and Climate Change

## Urban sustainability and global environmental governance

**Harriet Bulkeley and**
**Michele M. Betsill**

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Climate change is one of the most challenging global issues of our time. It is also a profoundly local issue. Cities can create innovative responses to climate change and, as key sites in the production and management of greenhouse gas emissions, will be crucial for the implementation of international agreements and national policies. This book provides a critical analysis of the role of cities in addressing climate change and the prospects for urban sustainability.

- Part I considers how global environmental governance and urban sustainability can be conceptualized, and argues for an approach which recognizes the multilevel nature of governance. It outlines international and national responses to climate change, and documents evidence for local responses to climate change, examining in detail the transnational *Cities for Climate Protection* network.
- Part II presents a series of case-studies drawn from this network in the UK, US and Australia. Each case-study examines the development and implementation of local climate change policy, focusing on the sectors of energy conservation, planning and transport.
- Part III compares the experience of the case-study cities in addressing climate change and assesses the implications of these findings for urban sustainability and global environmental governance.

*Cities and Climate Change* is the first in-depth and interdisciplinary analysis of the role of cities in addressing climate change and illustrates the multilevel nature of climate change governance. It argues that the formation and implementation of local climate change policy has been limited by the resources and powers of local government, and by conflicts between economic and environmental objectives. As cities are critical arenas for the pursuit of sustainable development, these findings have significant implications for the prospects of mitigating climate change and achieving urban sustainability.

**Dr Harriet Bulkeley** is a Leverhulme Research Fellow at the Department of Geography, University of Cambridge.

**Dr Michele M. Betsill** is Assistant Professor at the Department of Political Science, Colorado State University, USA.

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# Abbreviations

| | |
|---|---|
| AGBM | Ad Hoc Group on the Berlin Mandate |
| AGO | Australian Greenhouse Office |
| ALGA | Australian Local Government Association |
| AMEIF | Australian Municipal Energy Improvement Facility |
| CCP | *Cities for Climate Protection* |
| CFCs | Chlorofluorocarbons |
| CHP | combined heat and power |
| COP | Conference of the Parties |
| CSIRO | Commonwealth Scientific and Industrial Research Organization |
| DCPs | development control plans |
| EC | European Community |
| EEC | European Economic Community |
| EMAS | Environmental Management and Audit Scheme |
| ETSU | Energy Technology Support Unit |
| EU | European Union |
| GAP | Greenhouse Action Partnership |
| GCC | Global Climate Coalition |
| GDP | gross domestic product |
| HECA | *Home Energy Conservation Act* |
| ICLEI | International Council for Local Environmental Initiatives |
| IEA | International Energy Agency |
| INC | Intergovernmental Negotiating Committee for a Framework Convention on Climate Change |
| IPCC | Intergovernmental Panel on Climate Change |
| ISTEA | *Intermodal Surface Transportation Efficiency Act* |
| IULA | International Union of Local Authorities |
| JUSCANZ | Japan, the US, Canada, Australia and New Zealand |
| LA21 | *Local Agenda 21* |
| LED | light-emitting diode |
| NGO | non-governmental organization |
| NGRS | *National Greenhouse Response Strategy* |
| NSW | New South Wales |
| OECD | Organization for Economic Co-operation and Development |
| PPG | Planning Policy Guidance |
| RTD | Regional Transportation District |

| | |
|---|---|
| SEDA | Sustainable Energy Development Agency |
| UDP | Unitary Development Plan |
| UK | United Kingdom |
| UN | United Nations |
| UNCED | United Nations Conference on Environment and Development |
| UNEP | United Nations Environment Programme |
| UNFCCC | *United Nations Framework Convention on Climate Change* |
| US | United States |
| UTO | United Towns Organization |
| VMT | vehicle miles travelled |

# 1 Introduction

Climate change is one of the most challenging scientific and political issues of our time. The rapid collapse of the Larsen B ice shelf in Antarctica, the possible disappearance of the island of Tuvalau as sea levels rise, the decision of the reinsurance firm Munich Re to increase premiums and threats to European water supplies as a result of glacier retreat in the Alps are just some of the issues which are associated with climate change. Despite uncertainty as to whether any direct links can be drawn between current climatic events, recent trends in climate variables, such as temperature and precipitation, and predictions of global climate change, a consensus has emerged that 'something' needs to be done (see Box 1.1). However, questions as to what should be done, by whom, and when, remain highly contested.

### Box 1.1: What is climate change?

Climate change (also known as 'global warming') refers to an increase in mean annual surface temperature of the earth's atmosphere, due to increases in atmospheric concentrations of greenhouse gases, such as carbon dioxide ($CO_2$), methane ($CH_4$), CFCs and nitrous oxide ($N_2O$). According to the IPCC, concentrations of these gases have increased dramatically since 1750, due primarily to human activities such as the combustion of fossil fuels (Houghton *et al*. 2002). These gases absorb long-wave radiation and disrupt the earth's energy balance, which in turn influences the climate system. The IPCC reports that the average global surface temperature increased 0.6°C during the twentieth century (Houghton *et al*. 2002). This temperature increase has been linked to a number of observed changes in the global climate, including: a 0.1–0.2 metre rise in global average sea level; a 10 per cent decrease in snow cover since the late 1960s; more frequent, persistent and intense El Niño episodes since the 1970s; and more frequent and severe droughts in parts of Africa and Asia (Houghton *et al*. 2002).

Sceptics suggest that there is insufficient evidence to demonstrate that changes to the climate outside the scope of natural variability have taken, or will take, place. The IPCC argues in contrast that 'the balance of evidence suggests that there is a discernible human influence on the global climate' (Houghton *et al*.1996: 5). In 1999, the Chairman of the IPCC suggested that it is no longer a 'question of whether the Earth's climate will change, but rather when, where and by how much' (Watson 1999). On the one hand, some hold the belief that changes will be gradual, incremental and within societal control. On the other hand, the IPCC suggest that significant changes in global average temperatures and regional climatic conditions are to be expected, and that there is the possibility of unpredictable alterations to the climate system (Grubb 1999; Houghton *et al*. 1996).

Given the global nature of the problem, answers to these questions have been sought through processes of international negotiation between nation-states. For over a decade, the need for action to reduce emissions of greenhouse gases, the relative responsibilities of different countries and the means through which action could, or should, be taken, have been the subject of fierce debate. Forging an international agreement, so it seems, is the hard part. Consequently, analysis of the politics of climate change has also focused on the international sphere, with some consideration of national positions and politics. In this book, we challenge the assumptions behind this approach. We argue that climate change is not only a global issue, it is also a profoundly *local* issue. In turn, recognizing that climate change is a local issue raises questions about the meaning and pursuit of urban sustainability and our concepts of global environmental governance. In the rest of this introduction, we consider why cities are central to the politics of climate change, before outlining the structure of the book.

## Why cities and climate change?

The importance of local action as a means of securing global sustainable development was highlighted in the 1987 *Brundtland Report* and at the 1992 UNCED held in Rio de Janeiro, Brazil (the Rio Conference). Given the increasingly urban nature of consumption and production practices in developed and developing countries, this call for action is frequently interpreted as a need to foster urban sustainable development (see Chapter 2). Considerable attention has since been given to determining what urban sustainability might include, and how it might be implemented. For example, Satterthwaite argues that in order for cities to achieve sustainable development their 'environmental performance … has to improve not only in terms of improved environmental quality within their boundaries, but also in terms of reducing the transfer of environmental costs to other people, other ecosystems or into the future' (Satterthwaite 1997: 1669). Such a definition suggests that addressing climate change should be a key component of urban sustainable development.

Cities, it is suggested, are a significant arena through which to address climate change for four related reasons (Angel *et al.* 1998; Collier 1997a; Collier and Löfstedt 1997; DeAngelo and Harvey 1998; Feldman and Wilt 1993; Harvey 1993; Lambright *et al.* 1996; McEvoy *et al.* 1999; Nijkamp and Perrels 1994; Wilbanks and Kates 1999). First, cities represent sites of high consumption of energy and production of waste. The influence of local authorities over these processes varies with national circumstances but can include: energy supply and management, transport supply and demand, land-use planning, building requirements, waste management, and offering advice to the local community. Second, local authorities have been engaging with issues of sustainable development and attempting to translate global rhetoric into local practice through *Local Agenda 21* (LA21) in ways that have implications for the mitigation of climate change. Third, and following this point, it is argued that local authorities can facilitate action by others in response to climate change, both by lobbying national governments as well as by developing small-scale demonstration projects to illuminate the costs and benefits of controlling greenhouse gas emissions. Fourth, local authorities have considerable experience in addressing environmental impacts within the fields of energy management, transport and planning, and many have undertaken innovative measures and strategies to reduce their impact on climate change.

In short, local governments exercise a degree of influence over emissions of greenhouse gases in ways which impact directly on the ability of national governments to achieve

internationally agreed targets. The implications of this have slowly dawned on national governments over the past decade, as strategies to address climate change are redrawn to include a significant role for local governments. For example, *Climate Change: the UK programme* argues that:

> Local authorities have a special status as local, directly elected bodies. They are uniquely placed to provide vision and leadership to their local communities, and their wide range of responsibilities and contacts means that they are critical to the delivery of this programme. They can take forward the action needed on the ground to cut emissions, working with local communities, and will be central to efforts to adapt to the impacts of climate change.
>
> DETR 2000a: Chapter 7

However, local governments have not just responded to predefined policy goals set within national and international arenas, but represent an important site for the governance of global issues in their own right. First, local governments are taking action on issues related to sustainability, frequently through LA21, independently of national government. Second, transnational networks of local governments have been created as a means through which to diffuse policy programmes, exchange best practice and lobby at a national and international scale. These networks are illustrative of forms of governance which transverse the traditional hierarchy of global, regional, national and local scales. In this book, we examine the experience of six local authorities within one such network, the *Cities for Climate Protection* (CCP) programme, run by ICLEI. Through these case-studies, we consider the role of the CCP programme in fostering local action on climate change, the problems and possibilities encountered, and the implications of our findings for understanding the governance of climate change.

## An outline

Part I sets the context for our discussions of the local governance of climate change. In Chapter 2, we consider how global environmental governance has been conceptualized. We argue that international relations approaches have tended to 'black box' the nation-state and neglect the complex processes of governance which occur within it. The role of subnational governments in addressing climate change is therefore either ignored or taken for granted. We then consider the arguments made for a local approach to global environmental governance in the literatures on green political theory and sustainable cities. We find that in the main, although the role of subnational governments is considered in more detail, the 'local' is idealized and disconnected from the economic and political contexts in which it is situated. Despite their differences, in both cases the assumption is made that global environmental governance is essentially an hierarchical process, so that policies are seen as either emanating from the 'top down', or as being created from the 'bottom up'. In the final part of Chapter 2, we challenge this model, and consider how transnational networks of subnational governments can be conceptualized and analysed.

Chapter 3 provides an overview of the politics of climate change at global, national and local levels. It describes the processes of international negotiation which have taken place over the past decade and the key outcomes. We then consider how climate change has been addressed in three countries – the UK, the US and Australia, from which our case-studies are drawn. In each case, we find that domestic efforts to address climate change

have been shaped by larger debates about the relationship between the economy and the environment. We then review evidence to date for local initiatives to address climate change. While some local authorities have been acting independently on this issue, several transnational networks of subnational governments have been created specifically in order to address climate change. The CCP programme is one such initiative, and this chapter provides an outline of its history and rationale, before concluding by highlighting the questions we address in this book.

In Part II, we examine the impact of the CCP programme, and the problems and possibilities encountered in addressing climate change, in six case-studies. Chapter 4 provides an overview of the roles and responsibilities of local governments in each of the three countries from which the case-studies are drawn. While there are differences in the powers and resources available to each of the case-study local authorities, in general we find that local governments have at least some degree of autonomy. In addressing climate change, four key areas of potential action by local authorities can be identified: the supply and use of energy in the built environment; the use of energy in the transport sector; the form and design of urban areas; and the production and disposal of waste. This book considers the issues encountered in addressing emissions of greenhouse gases at the local level from the first three policy areas – energy management, transport and land-use planning.

In each case-study, we describe the evolution of local climate protection policy, and the influence of the CCP programme on this process. We then assess how climate protection has been put into practice with an analysis of the experience of each local authority in addressing climate change in specific policy sectors. In each case, we consider the national policy context in which local authorities attempt to implement climate protection policies. Three case-studies are taken from the UK. Chapter 5 assesses the role of land-use planning in Newcastle, Chapter 6 considers attempts to implement demand management policies in transport planning in Cambridgeshire, and Chapter 7 examines the evolution of energy management policies for housing and local government in Leicester. Turning to the US, Chapter 8 focuses on Denver, and the issues of in-house energy management and transport, while Chapter 9 assesses the concept of 'new urbanism' as a means of addressing climate change through land-use planning in Milwaukee. Chapter 10 examines how climate protection policies have been implemented in Newcastle (NSW), Australia, through in-house energy management, transport and land-use planning policies.

Part III provides a comparative analysis of the experience of addressing climate change at the local level across the case-studies, and discusses the implications for the pursuit of urban sustainability and our concepts of global environmental governance. Chapter 11 argues that the CCP programme has had the greatest impact on climate protection policy in Denver and Newcastle (NSW), moderate impact in Newcastle (UK) and Leicester, and the least impact in Cambridgeshire and Milwaukee. In this context, we examine the opportunities and constraints encountered by local authorities as they attempt to put climate protection policies into practice. Finally, we identify five key factors that shape the impact of the CCP programme on local governments and the implementation of climate protection policies:

1 the presence of a committed individual with institutional support for promoting climate protection;
2 the availability of funding for climate protection measures;
3 the level of local power over transport, energy and planning;

4 the way climate protection is framed, particularly in relation to economic objectives;
5 the political will to act.

Chapter 12 argues that the CCP programme is part of a shift towards the multilevel governance of climate change. We examine how governance takes place within the network (and especially how members are mobilized) and assess the role of the CCP programme in promoting policy learning and change among local authorities. We argue that, in the majority of case-studies, the weak connections between the network and the local authority, together with the fragmented nature of local climate change politics, has led to a limited degree of policy learning, where although the rhetoric of the need to act to protect the climate has been accepted, there is little consensus as to what this should mean in practice, and action has not been forthcoming. We also examine the relationship between the CCP programme and the state. While the network epitomizes the multilevel nature of climate change governance, it also demonstrates how this shift creates new opportunities for states to participate in governance processes. We conclude that it is only by examining climate change governance as a multilevel process that we can fully capture the social, political and economic processes that shape the way that local authorities participate in and contribute to global environmental governance.

# Part I

# Governing climate change

# 2 Global environmental governance

In this chapter, we explore the concept of global environmental governance, and the role of cities and subnational governments in addressing global environmental issues. While there are many different perspectives and interpretations of the term governance, broadly speaking we can say that it implies a focus on 'systems of governing', means for 'authoritatively allocating resources and exercising control and co-ordination' (Rhodes 1996: 653), in which the state (or government) is not necessarily the only or most important actor. For many analysts, this shift towards a governance perspective has entailed a recognition of the roles played by supranational and subnational state and non-state actors, and the complex interactions between them. Such an approach is important in the context of global environmental issues, where governance takes place through processes and institutions operating at international, transnational,[1] national and local scales.

As outlined in Chapter 1, the focus of this book is on one example of global environmental governance, the CCP programme. In this chapter, we explore how such a network, which is simultaneously global and local, could be conceptualized. Frequently in environmental politics the distinction is made between 'global' processes and actors, and those which are 'local' in origin and scope (Auer 2000). We find this distinction unhelpful, and in this chapter argue that the processes of global environmental governance require an analysis which is not fixed at a particular spatial scale. In the first section, we consider some perspectives on global environmental governance offered by international relations. We argue that, because of assumptions about state and non-state actors, neither regime theories nor accounts of an emerging 'global civil society' deal adequately with the subnational state. We turn in the second section to a consideration of the arguments made for a local approach to global environmental governance. Tracing these debates through the literatures on green political theory and sustainable cities, we find that while the role of subnational governments is considered in more detail, the assumption remains that global environmental governance is essentially hierarchical. In the concluding section we challenge this model, and consider how transnational networks of subnational governments could be conceptualized and analysed.

## Governing the global environment

Global environmental issues, such as climate change, pose a significant challenge to conventional analyses of international relations, politics and power. The nation-state has a central role in governing the global environment, through the formation of international agreements and their domestic implementation. However, the nation-state is not the only

actor on the global stage, and the traditional separation between domestic and international politics is increasingly problematic. In this light, attention has focused on the roles of non-state actors and how they interact across state boundaries, in turn facilitating action by nation-states and performing governance functions themselves. In this section, we examine how notions of global environmental governance have developed within the field of international relations, focusing on theories of regimes and global civil society, before considering the extent to which these approaches can inform an analysis of the role of subnational governments in governing climate change.

### *International regimes*

For the majority of international relations scholars, global governance is conducted through the interactions of nation-states. In the absence of a world government, authority and legitimacy reside with national governments and the structures they establish to manage common problems. Although a variety of approaches have been adopted for the analysis of why, how and with what effect such governance takes place (see Paterson 1996; Kütting 2000), in the field of global environmental politics most attention has been directed to the role of regimes in shaping inter-state behaviour (see Box 2.1). Given that global environmental problems are predominantly seen within international relations as problems of collective action over common resources, it is unsurprising that they should attract the attention of the 'neo-liberal institutionalist' school with its concerns for resolving inter-state conflict through co-operation and the establishment of institutions. From this perspective, regimes, which emerge either through the initiative of a hegemon or through interest-based inter-state bargaining, are formed in a specific issue area to facilitate co-operation by providing information and reducing transaction costs (Hasenclever *et al.* 1997). Regime analysis has traditionally centred on the conditions under which effective regimes are created and maintained, where effective is defined in terms of successful co-operation between nation-states and the coherence of the regime.

**Box 2.1: Defining regimes**

International regimes are 'social institutions that consist of agreed upon principles, norms, rules, decision-making procedures, and programs that govern the interactions of actors in specific issue areas' (Young, O. 1997a: 5–6).

The utility of such approaches has been questioned in the environmental context on the basis of three critiques. First, international environmental regimes have been created by non-hegemonic states and/or non-state actors. For example, the *Convention to Combat Desertification* was an initiative led by developing countries in the face of opposition from the US (Porter *et al.* 2000), and the *Basel Convention* on trade in toxic wastes was based on work conducted by Greenpeace and the Centre for Science and the Environment, New Delhi (Wapner 1998: 285). Second, neo-liberal institutionalist theories of regimes are 'rationalist' in the sense that they assume regimes are formed by states with predetermined interests shaped by material factors (e.g. wealth or military might). As Litfin (1993, 1994) argues, any approach based on rational choice assumptions that

interests are easily defined is especially misleading in the environmental context, where certainty about outcomes and impacts is often limited. Third, the scope of rationalist regime theory is too narrow, neglecting as it does the pre-negotiation phase in which interests are constructed, defined and adopted by nation-states. As a result, these approaches overlook the domestic processes and non-state actors involved in shaping global environmental governance (Jakobsen 2000; Kütting 2000; Newell 2000). For example, in her study of the politics of climate change in Brazil and India, Jakobsen (2000) found that a range of domestic and transnational scientific and environmental organizations had been involved in the formation of 'national' interests, so that any analysis which saw the state as determining interests, and hence the structure and effectiveness of regimes, was flawed. Furthermore, it is precisely these 'exogenous' variables, such as domestic processes or non-state actors, which are often seen to account for regime success or failure (Kütting 2000: 26). By adopting a narrow approach to global governance, regime theory lacks the explanatory power to show how it actually takes place.

Some scholars of global environmental politics have thus revised traditional regime theory to emphasize the role of ideas in shaping the ways in which states define their interests. These 'knowledge-based' or 'constructivist' approaches view international regimes as a means through which cognitive and normative aspects of the problem in question come to be constructed and learnt, and in turn shape the ways in which states perceive their interests (Hasenclever *et al.* 1997; Litfin 1994; Paterson 1996; Payne 2001). This shift in focus widens the scope of regime theory and reconceptualizes the processes through which regime formation and maintenance are seen to take place. In particular, attention is paid to the role of non-state actors, such as intergovernmental organizations, non-governmental organizations (NGOs), multinational corporations and scientists in the formation and maintenance of international regimes (Betsill and Corell 2001; Elliot 1998; Haas 1990; Haas *et al.* 1993; Keck and Sikkink 1998; Litfin 1993, 1994; Newell 2000; Risse-Kappen 1995a; Young, O. 1997b).

### *Non-state actors and international regimes*

The significance of non-state actors in international regimes is seen primarily to lie in the role that they play in shaping the interests of nation-states, structuring regime formation and contributing to the implementation of regime objectives. In particular, in the field of global environmental politics, there has been considerable attention paid to the role of scientists in influencing how state decision-makers define their interests. For example, in the epistemic communities approach developed by Haas and colleagues (Haas 1990; Haas *et al.* 1993), a group of actors sharing world-views come to a scientific consensus on the importance and dimensions of an issue, and feed this to policy-makers, who then define their interests and partake in regime formation. While this is a simplified version of the theory, the essence is of science providing 'truth' to the 'power' of policy makers. This approach has been criticized by scholars who see the process as more complex (Litfin 1994; Jasanoff and Wynne 1998). For these analysts, recognition of the importance of non-state actors in the processes of interest formation, issue definition and regime construction, has led to an emphasis on the role of regimes as forums through which problems are defined and contested, and where interests are constructed, rather than simply negotiated (Litfin 1993; Keck and Sikkink 1998; Paterson 1996; Risse-Kappen 1995b). Despite the differences in these approaches, they share the belief that scientific communities are critical to the governance of global

environmental issues, by providing information that shapes the ways in which state decision-makers understand global environmental problems.

Non-state actors also participate directly in the formation and maintenance of international regimes. When states meet to negotiate new agreements and/or create new institutions, environmental NGOs engage in a variety of activities designed to set the agenda and/or structure the specific agreements arrived at by states (Zürn 1998). For example, between 1993 and 1997, a total of 187 NGOs participated in the negotiations on the *Convention to Combat Desertification*. These organizations published newsletters, established working groups and regularly met with state delegates (both formally and informally in the corridors). They advocated a participatory, bottom-up approach to managing the problem of dryland degradation, an approach that is clearly reflected in the text of the convention. The convention also explicitly recognizes the importance of local participation and the involvement of NGOs in the treaty's implementation (Corell and Betsill 2001). However, despite the growing influence of non-state actors in environmental regimes, for the most part, emphasis is still placed on the nation-state as the main actor in global environmental governance, and the significance of non-state actors is measured in terms of the extent to which they shape, facilitate and change the behaviour of nation-states within international regimes (Auer 2000: 159; Litfin 1993: 96). While this is not an unreasonable position – clearly nation-states are critical actors in global environmental governance – it raises two further critiques which regime theory has not yet addressed. The first relates to the nature of the nation-state. Aside from some interest in the concept of sovereignty (Litfin 1998a), the notion of transgovernmental coalitions (Risse-Kappen 1995c; Slaughter 1997), and the two-level game approach advanced by Putnam (1988) to explain the interaction between domestic and international politics, in the main the state remains treated as an homogeneous and unitary actor. Below, we discuss whether or not such a position can be sustained in the context of changing notions of the role and function of the nation-state and in the wake of continuing processes of globalization and decentralization.

A second critique suggests that within the regime approach the conceptualization of the causes of global environmental problems is flawed. Paterson (2001) argues that most scholars working in the regime theory tradition view global environmental problems, such as climate change, as stemming from a 'tragedy of the commons', whereby individual actors (nation-states) pursuing their own self-interest will overuse open-access resources to the detriment of all, and/or 'discrete trends', such as population growth, consumption and industrialization, which force states to exploit nature. From this perspective, addressing global environmental problems requires overcoming a collective action problem; it is necessary to establish international institutions to constrain the use of common resources. However, by assuming that the root cause of environmental degradation lies in the inter-state system, and conflating the global nature of the problem with the scale of possible action, regime theory neglects the other means through which the causes and consequences of global environmental issues are governed. Rather than being the sole result of a lack of collective action within the inter-state system, global environmental problems stem from a myriad of social practices operating at local, regional, national and international scales (Auer 2000; Lipschutz 1996, 1997a; Lipschutz and Conca 1993; Paterson 2001; Young, O. 1997c). As Auer (2000: 175) argues, this means that for those problems which are simultaneously local and global, 'the state-centred view offers few insights as to the constitutive, organizational and human resource requirements for effective policy'. Lipschutz (1996) and Newell (2000) suggest that researchers should

therefore question whether international agreements are necessary for the resolution of global environmental problems, or whether new forms of transnational alliances between non-state actors can in fact perform such functions, and achieve effective action, better than international coalitions of states. Given the manifold problems encountered in inter-state environmental negotiations, this is not only an interesting theoretical muse, but a significant practical and political issue.

### *Global civil society*

In the light of these critiques, some authors have begun to examine the role of non-state actors in global environmental governance in a more radical way. In these accounts, sometimes labelled 'global civil society' (Lipschutz 1996), global environmental governance is not only the province of inter-state negotiations and regimes. Rather, governance takes place through 'systems of rule' (Rosenau 1992) that operate at different scales and represent the 'sum of the many ways that individuals and institutions, public and private, manage their common affairs' (O'Brien *et al.* 2000: 9). In other words:

> Governance occurs on a global scale through both the co-ordination of states and the activities of a vast array of rule systems that exercise authority in the pursuit of goals and that function outside normal national jurisdictions. Some of the systems are formalised, many consist of essentially informal structures, and some are still largely inchoate, but taken together they cumulate to governance on a global scale.
>
> Rosenau 2000: 172

This approach to global environmental governance stems from the recognition that 'while governments are the main authoritative political institutions, politics as an activity or politically relevant behaviour is not exhausted by them' (Wapner 1996: 7). Politics, and the exercise of power, are seen not simply as a matter of coercion to which nation-states have the ultimate claim. Instead, they involve cognitive, normative and economic dimensions over which other institutions and actors have influence and control. For example, Wapner (1996, 1998), drawing on the work of Lukes and Foucault, argues that the power of transnational environmental groups lies in their ability to shape human behaviour through changing the dominant discourses, moral codes and knowledge surrounding environmental problems. Similarly, Newell (2000) argues that it is only by moving away from traditional notions of power as the exercise of domination and authority, in which one actor's gain is another's loss, towards a more nuanced approach, that the significance of non-state actors in global environmental governance can be recognized.

Global civil society approaches move away from state-centred explanations for the nature and effectiveness of global environmental governance, broadening the scope of analysis by stressing the multiplicity of actors and institutions which influence the ways in which global environmental issues can be addressed. Emphasis on the different actors and institutions of significance varies. Although much of the literature stresses environmental NGOs (Princen and Finger 1994; Lipschutz 1996; Smith., J. G. *et al.* 1997; Wapner 1996), other organizations, such as those concerned with economic globalization (O'Brien *et al.* 2000) or particular economic interests and scientific issues (Newell 2000), have also been included. Some authors also take account of more diffuse influences on policy processes, such as the media and public sentiment (Jakobsen 2000; Newell 2000), or stress that global environmental problems represent the outcomes of 'micro-level

practices' (Lipschutz 1996: 68), so that governance takes place through different local, regional, national and international processes simultaneously. In these accounts, the focus is not only on the ways in which non-state actors assist nation-states in the formation, regulation and effectiveness of international regimes. In addition, attention is given to the ways in which non-state actors take on the roles traditionally assigned to nation-states and international regimes of defining problems, influencing negotiating positions, monitoring effectiveness and enforcing compliance. Furthermore, non-state actors are often responsible for the initiation of schemes to ameliorate environmental problems, from publicity campaigns and boycotts to water conservation and participation projects (Wapner 1996). These roles are conducted not only by individual non-state actors, but through transnational networks of actors and institutions which operate simultaneously across multiple scales (Jakobsen 2000; Lipschutz and Conca 1993; Newell 2000; O'Brien *et al.* 2000; Smith, J. G. *et al.* 1997; Wapner 1996). According to Risse-Kappen (1995a: 3), such networks involve 'regular interaction across national boundaries when at least one actor is a non-state agent or does not operate on behalf of a national government or intergovernmental organization'. Examples include Greenpeace, the Climate Action Network, the Ford Foundation, and the Business Council for a Sustainable Energy Future (Keck and Sikkink 1998; Lipschutz 1997a; Wapner 1996). Lipschutz (1997b: 446) views the rise of these networks as 'manifestations of the diffusion of governance away from a concentration in the state to both the global and local levels'. These networks mobilize information, ideas and values with the objective being 'the integration of new conceptions of these environmental phenomena into everyday world-views and practices' of private as well as public actors (Lipschutz 1997b: 443). To date, such networks have primarily been conceived as non-state entities, leaving little space for the analysis of other actors. We return to the issue of how transnational networks of subnational governments could be conceptualized in the final section of this chapter.

One potential problem with the global civil society approach is that its analytic focus could be lost by classifying all activities as amounting to the governance of global environmental problems. To guard against this outcome, authors stress the institutionalized and purposive nature of governance as taking place through systems of rule in which an institution or actor influences or controls the behaviour of others (Rosenau 1992, 1995). While societies may be subject to various processes of governance which affect the global environment on a day-to-day basis, not all actors are equally able to influence and direct these processes. Another critique has been levelled at the assumed relationship between state and non-state actors in the literature on global civil society. Some of the early work in this tradition assumed an erosion of state sovereignty by non-state actors, as they filled the void in state capacity created by global environmental problems. Litfin (1998b: 4) warns against such assumptions, arguing that the nation-state is still a key actor in global environmental governance, even though its existence as a homogenous entity is being challenged. Other commentators share her sentiments, and argue that such 'zero-sum' games are unhelpful (Auer 2000; Risse-Kappen 1995b; Newell 2000). Indeed, for the majority of scholars interested in the role of non-state actors in global environmental governance, the nation-state still has a crucial role to play. It is therefore not a question of substituting one actor for another, but of considering how, when, why, and with what effect, interactions take place between state and non-state actors in the process of global environmental governance. The picture is blurred further by the recognition that the distinction between state and non-state actor is not absolute (Auer 2000). In some cases state representatives are in fact members of NGOs, for example, the Alliance of Small

Island States has been represented by the London-based NGO, FIELD, at the climate change negotiations, and that many non-state actors were founded, or are still supported through, state actors. Similarly, this distinction between state and non-state actors is unclear in the case of a transnational network of subnational governments.

A final weakness, common to knowledge-based regime theory and global civil society approaches, concerns their view of the state. While both approaches challenge traditional notions of global governance, politics and power, and emphasize the constructed and contested nature of global environmental problems, neither problematizes the nature and role of the state. Litfin (1993: 101) asserts that such analyses demand a reconsideration of the state and its boundaries, for 'the state no longer appears as a unitary actor making rational decisions, but is splintered into competing bureaucratic and economic interests' as the 'levels of analysis, from subnational to national and international, blur as the state and its interests are increasingly problematized'. In the next section, we argue that in order to understand processes of global environmental governance it is important to move beyond traditional concepts of the state as a national entity, and to examine the role of subnational governments.

### *Subnational governments and global environmental governance*

Within international relations, the state is considered a unitary actor, a 'fixed territorial entity … operating much the same over time and irrespective of its place within the geopolitical order' (Agnew and Corbridge 1995: 78). In other words, an actor operating at the national scale and whose interests are uniform. Agnew and Corbridge (1995: 86) argue that this approach is sustained by the assumption that the nation-state is sovereign

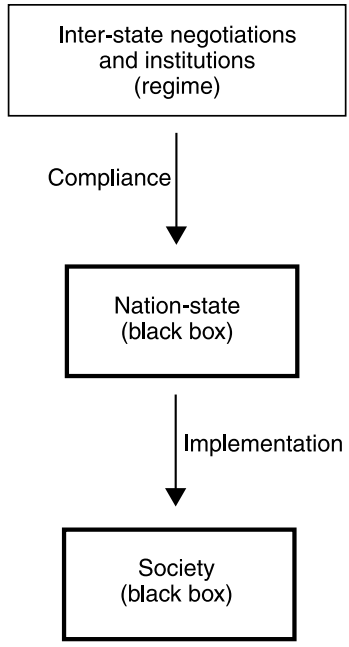


*Figure 2.1* Regime theory and the 'cascade model' of global environmental governance

within defined territorial boundaries, which in turn means that political identity is located only with reference to the nation-state. Implicit in this approach, we suggest, is the assumption that subnational governments act under the (sole) influence and direction of national government. In this 'cascade model' (Figure 2.1), once international agreements have been negotiated they are taken home to be implemented, or ignored, by national governments, with consequent obligations on the part of local government. Although, as discussed above, the engagement of regime theory with issues of environmental governance has led to a revision of the nature of interests, politics and influence operating within regimes, in the main the state remains defined in terms of the national government, albeit with potential internal conflicts and the roles of domestic actors noted (Figure 2.2). Likewise, global civil society approaches, while acknowledging the roles of 'systems of rule' at various scales of governance, do not explicitly challenge the notion of the state as a national entity. In each case, the potential role of subnational government is ignored, or implicitly subsumed within the nation-state. Two factors may account for this situation. First, both approaches have been engaged in the consideration of the role and influence of *non*-state actors, either within or outside international regimes. Second, despite the recognition of the importance of governance processes taking place at other levels, the focus of analysis remains on actors and institutions operating at the international scale. At first glance, subnational governments appear to rule themselves out of the picture by being state-based, local institutions. However, this analysis of the role, scope and politics of subnational governments can be critiqued on two counts. First, because it ignores the internal political dynamics of the state and the contested boundaries between state and non-state actors. Second, because subnational governments are increasingly involved in transnational networks through which governance takes place.

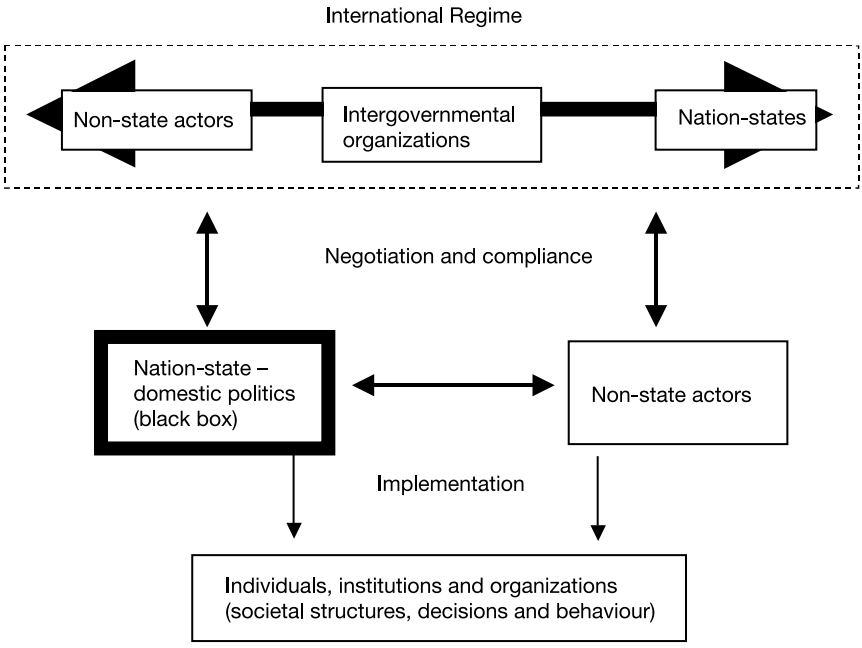


*Figure 2.2* 'Constructivist' regime theory and the cascade model

The cascade model assumes a territorially defined, relatively stable and hierarchical structure of government within the nation-state. However, many analysts have called into question the stability of the state in the face of global economic integration, changing modes of capital accumulation, nationalist and other decentralizing movements, and ideological shifts in the role of the welfare state (Brenner 1999; Camilleri and Falk 1992; Castells 1997; Jessop 1994; Swyngedouw 2000). As Agnew and Corbridge argue,

> during the past twenty years … the ways in which space is produced and used, have changed profoundly. In particular, both territorial states and non-state actors now operate in a world in which state boundaries have become more culturally and economically permeable to decisions and flows emanating from networks of power not captured by singularly territorial representations of space.
>
> Agnew and Corbridge 1995: 95

In the context of such processes, global environmental governance can not 'be adequately understood in terms of the fixed territorial spaces of mainstream international relations (and international political economy)' (Agnew and Corbridge 1995: 99). Moreover, it has been argued that within western democracies, a transition from government to governance is taking place at national and local levels, as the roles of the public, private and voluntary sector are restructured (see Table 2.1). Peters and Pierre (2001: 131) suggest that, in effect, this means that 'political power and institutional capability is less and less derived from formal constitutional powers accorded the state but more from a capacity to wield and coordinate resources from public and private actors and interests'. In turn, this has led to a reconsideration of the different levels of government and governance, at local, regional, national and international levels, and the ways in which legitimacy and authority have been reconfigured between them. As several commentators suggest, this is leading to new 'geographies of governance' (MacLeod and Goodwin 1999: 505), as the functions of the state are redistributed upwards, to international and transnational organizations and institutions, downwards, to cities and regions, and outwards, to non-state actors, in effect leading to a 'hollowing out' of the nation-state (Jessop 1994; MacLeod and Goodwin 1999; Pierre and Peters 2000). This is not to say that these trends are necessarily a sign of the growing weakness of the nation-state. Instead, such shifts can be seen to represent 'state strategies to reassert control' (Pierre and Peters 2000: 16). For, as Swyngedouw (2000: 70) has argued, 'the continuous reshuffling and reorganizations of spatial scales are an integral part of social strategies and struggles for control and empowerment' in which the state plays an integral part. It is

*Table 2.1* From government to governance

| | *Old government* | *New governance* |
|---|---|---|
| Location of power | The state | The state and civil society |
| Exercise of power | Hierarchy and authority | Networks and partnerships |
| Actors | The public sector | Public, private and voluntary sectors |
| Role of the state | Providing, commanding, controlling | Steering, enabling, facilitating, collaborating, bargaining |

*Source*: Adapted from Leach and Percy-Smith 2001: 5.

imperative then, not to confuse 'a hollowing-out of state forms with a hollowing-out of state power', nor to assume that a linear trend of shifts from government to governance is taking place (MacLeod and Goodwin 1999: 522). However, while the nation-state remains a central actor in processes of government and governance, it is clear that the respective roles and capabilities of national and subnational governments have not remained static, and that concepts of multilevel governance may more accurately capture the political make-up of western polities. In considering how global environmental governance takes shape, these changing dynamics of national and subnational governance can not be ignored, and we return to the concept of multilevel governance below.

A consideration of the role of subnational government is clearly important for a greater understanding of the role and capacities of the nation-state. However, subnational governments also represent an important site of global governance in their own right. The predominant view that local structures of government and governance are concerned only with local issues is based on the supposition that the scale of the issue and the scale of politics are necessarily coincident (Cox 1998; Smith, M. 1998). Furthermore, it is usually assumed, as is evident in the cascade model, that institutional relationships between the international, national, regional and local are vertical. However, evidence suggests that such relationships can bypass levels of governance, and so take place directly between, for example, the local and the international (Peters and Pierre 2001: 132). The role of transnational networks has been noted in the attention given to the importance of city-regions and world cities in the processes of economic globalization and governance (Beauregard and Pierre 2000; Brenner 1999; Clarke and Gaile 1997; MacLeod and Goodwin 1999; Pierre and Peters 2000; Scott 2001; Swyngedouw and Baeten 2001). The formation of transnational networks between subnational governments within the EU in order to promote specific issues or regions has also been explored (Benington and Harvey 1998, 1999; Ward and Williams 1997). This research showed that such networks not only cross the vertical axis of inter-governmental relationships assumed in the cascade model, but also transgress traditional notions of state and non-state actors, and party political lines. Though, as we suggested above, the significance of transnational networks has been noted within the field of global environmental politics, little attention has been directed at the potential of subnational governments as sites through which global environmental governance can, and does, take place. This is perhaps all the more surprising given the pre-eminent position awarded in green political theory to local initiatives to address environmental problems and in light of the battle cry of the Rio Conference to 'think globally, act locally'. The next section considers the roles which have been assigned to the local scale, and to cities in particular, as the means through which to address environmental sustainability, before we return, at the end of the chapter, to consider where an analysis of the role of a transnational network of subnational governments in global environmental governance might begin.

## Sustainable cities

Although neglected within international relations accounts of global environmental governance, the local scale has had a privileged status in much of the literature surrounding green political thought. In this section we examine the basis of this approach, before moving to consider how the concept of sustainable cities has been developed and institutionalized within international efforts to promote sustainable development. We then turn

to consider how urban sustainable development has been theorized and some critiques of current approaches.

### *Green politics and the local scale*

The call to decentralize political and economic processes has been a central tenet of green movements, parties and some theorists during the resurgence of green politics in the past three decades. Summarizing this approach, Barry (1999: 77) suggests that for many involved with green politics it seems that 'stateless, self-governing communities plus solar power equal the "sustainable society" '. Encapsulated in the phrase 'small is beautiful', decentralization has been a key element of eco-anarchist thinking, such as that of social ecology or bioregionalism, which is prescribed as a means of creating communities which live within the limits of particular ecosystems (Barry 1999; Eckersley 1992). This emphasis on decentralization and the need to establish self-governing local communities in order to address environmental problems stems from three related arguments.

The first is a rejection of state organizations, in part a reflection of the links between some aspects of green politics and thought and the anarchist movement. The argument is made that the rationalistic and divisive nature of states and the inter-state system is the root cause of many environmental problems, so that such entities can not be expected to address the radical changes needed to move towards a more environmentally friendly society (Barry 1999: 77–78; Paterson 2001). Rather than place faith in subnational state organizations, this argument calls for new systems of governance at the local level which are self-organized and community-based.

The second argument is founded on the belief that systems of governance should relate to ecosystems in their form and extent. In some approaches this is little more than 'naïve naturalism' (Barry 1999: 78), a belief that such institutions will be better able to protect the environment because they share similar characteristics. For others, the argument is made that it is only at the local scale that organizations and individuals can be aware of their impacts on the environment. By creating systems of governance in tune with the scale of natural processes and which relate to natural boundaries, for example along the contours of watersheds or bioregions, it is more likely that environmental protection will be pursued.

The third argument in favour of decentralization regards it as a necessity in order to establish the kind of direct democracy and participation which can resolve environmental problems. In this line of thinking, people need to be able to participate in a community and make decisions about a known locality in order to address environmental problems (Goodin 1992: 149). Such participation can only be secured if it is seen to make a difference, and so must be based on direct rather than representative forms of democracy. In other words, people must be involved directly in the decisions which affect them, their community and their environment if 'good' environmental decisions are to be made. This argument is supported by the belief that such forms of participation are intrinsically good, and that they will lead to decisions which are 'better' for the environment and to action on the part of individuals to that end (Goodin 1992; Macnaghten and Jacobs 1997; Sagoff 1988).

Unsurprisingly, such utopian ideals have come in for a good deal of criticism. They are seen as naïve, and lacking any substantial mechanism through which to move from current patterns of global political and economic integration towards such small-scale entities.

Neglect of the distribution of resources between small-scale communities and the problems caused by issues which cross such boundaries have also been seen as problematic (Barry 1999; Eckersley 1992; Goodin 1992). As Goodin (1992) argues, the very nature of the green project, to address environmental issues at all scales, seems undermined by the means which are advocated as solutions to current environmental crises. A further problem identified is with the argument that direct participation can in fact lead to better environmental decisions, an assumption which rests on the argument that individuals possess an appropriate ecological consciousness (Eckersley 1992: 174) or will adopt one through processes of deliberation and participation, neither of which is assured. In other words, whether 'small is possible' (Dryzek 1987) is not the only objection to arguments for decentralization, for:

> 'small' is not 'beautiful' when the role of the nation-state is replaced with the role of the local community in circumstances where the local community is impoverished and its local ecosystem is poorly endowed or denuded, or where the local community chooses or is forced by economic necessity to adopt, a development path that undermines the local ecosystem.
>
> Eckersley 1992: 182

Despite the problems with these approaches, and the improbability of realizing such utopian projects, elements of the arguments outlined above are still current in debates about the means through which environmental problems should be addressed. Although much of this debate has in the past focused on non-urban places, with the notable exception of Bookchin and his concept of a confederation of urban centres (Barry 1999), arguments for decentralization are now evident in the evolving debate surrounding sustainable urban development.

### *Sustainable development and sustainable cities*

Sustainable development has become the common currency through which environmental issues are contested and constructed. The concept was brought to life with the publication of the *Brundtland Report* in 1987 (WCED 1987), though its intellectual heritage stretches back to the 1972 UN Conference on the Human Environment held in Stockholm and subsequent policy initiatives (Elliot 1998). At the heart of the Brundtland definition of sustainable development is the principle that development and environmental protection can be reconciled in ways which enable current needs to be met, without jeopardizing the ability of future generations to meet their own needs. The argument is that this reconciliation is needed in order to address issues of poverty and environmental degradation, and can be made through the application of appropriate technology and through using resources more efficiently. In pursuing these goals, the need to take into account issues of international, inter- and intra-generational equity is also stressed. In short 'sustainable development … is about the achievement on a global [and local] scale of three principles: economic development, social justice, and ecological responsibility' (Gleeson and Low 2000a: 6).

The all-encompassing nature of sustainable development has led to a great deal of dispute over its definition and implementation (see Box 2.2). On the one hand, governments and businesses have embraced the concept as signalling that economic growth can be reconciled with environmental protection with little difficulty. On the other hand, envi-

**Box 2.2: Sustainable development – weak or strong?**

Many different typologies of sustainable development have emerged since the 1987 *Brundtland Report* brought the term into popular use. One example is that which seeks to locate different versions of sustainable development along a spectrum from 'weak' to 'strong' (Owens and Cowell 2002: 28–47).

*Weak* interpretations of sustainable development imply either that environmental issues should be included in decision-making processes but are ultimately tradable against social and economic considerations, or that all three goals can be pursued simultaneously.

*Strong* concepts of sustainable development suggest that while trade-offs between economic, social and environmental considerations are inevitable, some environmental systems, goods, beliefs or values are 'critical', and should be exempt from any process of trade-off. However, such interpretations do not remove the need for deciding between competing priorities, as some basis for deciding what should be exempt from trade-off, and what should not, is still required.

ronmental groups have argued that the priority is to sustain the environment, with economic growth as a secondary aim. Furthermore, commentators suggest that any reconciliation between environmental, economic and social goals is not a straightforward matter, but depends on the nature of the goals under consideration, the scales at which compromises are being sought, and the interests and values which are being negotiated (Bulkeley 2001a; Owens and Cowell 2002). While the debate about sustainable development has moved from a concern with particular outcomes towards the need to develop a process of sustainability, the problems of deciding what should be sustained, and for whom, remain. As Gleeson and Low (2000a: 6) suggest, rather than being fixed, sustainability is a shifting compromise between economic, social and environmental objectives, between the present and the future. In effect, rather than being a fully formed idea, sustainability is a term whose meanings and implications are determined within the context of particular conflicts and processes of policy development (Owens and Cowell 2002).

It is from considerations of sustainable development that the concept of *sustainable cities* has emerged. Traditionally, cities have been located outside debates about the means through which to address environmental problems. This separation can in part be traced through the heritage of the conservation ideal which dominated environmental thought between the nineteenth and late twentieth centuries, and which identified 'the rural' or 'wilderness' with the environment, which needed to be preserved against the encroachment of the city/culture (Haughton and Hunter 1994; Owens 1992). Despite this conception of the environment as somehow 'external' to the city, cities have been places in which environmental issues have been addressed over the past hundred years. From the development of water and sewerage systems, to the establishment of parks and recreational areas, and the tradition of land-use planning, several attempts have been made to address the environmental issues of urban areas (Breheny 1996; Gleeson and Low 2000b; Rydin 1998a). The *Brundtland Report* highlighted this role, with a specific chapter on the environmental issues facing cities, and argued that as the majority of the world's future population will live in urban areas, cities should be central to the pursuit of sustainable

development (WCED 1987). The concern of the report with issues of economic and social equity as well as environmental protection made cities, and the brown agenda of air pollution, sanitation and energy use, a key arena in which the concept of sustainable development could be applied.

The focus on cities as a means to address environmental issues was taken up by the EU in their *Fourth Environmental Action Plan* and specifically in the *Green Paper on the Urban Environment* (Fudge 1999; Hebbert 1999; Ward and Williams 1997). In the wake of these developments, an Expert Group on the Urban Environment was established and various initiatives were put in place to encourage cities and towns within the EU to experiment with sustainable development. However, it was not until the 1992 Rio Conference that cities were fully recognized as an arena through which sustainability could, and should, be pursued. In the lead-up to Rio, associations of municipalities, including International Union of Local Authorities (IULA) and the United Towns Organization (UTO), began campaigning for a local perspective to be included in the conference through declarations and statements of intent. However, in the first preparatory meetings for UNCED, no recognition was given to the role of cities and local authorities in delivering sustainability. It is Jeb Brugman, then secretary general of ICLEI, who is credited with persuading the UNCED secretariat that such a perspective should be included, and for creating Chapter 28 of *Agenda 21* (see Box 2.3), which refers specifically to the role of local authorities in meeting global environmental goals (Hams 1994). While not setting down a particular course of action, Chapter 28 calls for all local authorities to have established by 1996 an LA21 through participation with their communities, and encourages the establishment of mechanisms to promote co-operation and co-ordination between local authorities internationally. This call to attention has engendered responses from national governments, promoting local action through initiatives such as the UK Sustainable Community Projects (Smith, J. H. *et al.* 1998), through transnational networks, such as ICLEI and the European Sustainable Cities and Towns Campaign,[2] seeking to establish best practice for urban sustainable development, and has 'precipitated extensive action at the level of the municipality' worldwide (Selman 1998: 533; see also Lafferty and Eckerberg 1998; O'Riordan 2001; O'Riordan and Voisey 1998).

Although much attention has been paid to the impact of Rio on local authorities, Gordon (1994) suggests that in effect it gave an impetus to initiatives which were already taking place at a local level and through embryonic networks of local authorities. However, despite the element of continuity with past local endeavours, Gilbert and

**Box 2.3: *Agenda 21*, Chapter 28 – local authority initiatives in support of *Agenda 21***

> Because so many of the problems and solutions being addressed by *Agenda 21* have their roots in local activities, the participation and co-operation of local authorities will be a determining factor in fulfilling its objectives. Local authorities construct, operate and maintain economic, social and environmental infrastructure, oversee planning processes, establish local environmental policies and regulations, and assist in implementing national and subnational environmental policies. As the level of governance closest to the people, they play a vital role in educating, mobilizing and responding to the public to promote sustainable development.
>
> Lafferty and Eckerberg 1998: 263

colleagues (1996: 69) argue the Rio Conference 'had two important consequences for the role of cities. First, UNCED increased awareness of the potential role of cities in dealing with environmental issues. Second, it emphasized the direct link between action on environmental issues and international cooperation between cities'. LA21 has provided the basis for discussion at local, national and global levels, the latter through the Habitat II Conference,[3] as to the role which local authorities and communities could take in addressing global sustainability. Although there is little doubt that in the post-Rio era the number of local authorities engaged with the environmental agenda and membership of transnational networks has expanded significantly, there is scant evidence as to the impacts of these developments in addressing global and local sustainability (Low *et al.* 2000a). Evidence for the uptake of LA21 has to be treated with caution in a context where analysis has focused primarily on the organizational changes within local government or self-reporting of involvement (Eckerberg and Lafferty 1998; Gibbs *et al.* 1998; Selman 2000; Sharp, L. 1999). We return to the issue of transnational networks of subnational governments and their implications for studying global environmental governance below. First, we consider what the pursuit of urban sustainable development might involve.

### *Sustainable cities: a new localism*

Sustainable cities has become a term used to categorize a host of disparate projects, processes and analyses concerned with social, economic or environmental issues in urban areas. While not all such initiatives are novel, for example interest in the impacts of energy management and planning on the environment pre-dates explicit concerns with sustainable development (Owens 1986a), it is the profile given to this arena as a means of addressing local and global environmental problems that is new. The rationale for pursuing urban sustainability, which has been promoted through international agreements and NGOs, as well as through the activities of local governments, comes from two sources. First, many environmental problems, both local and global, stem from the activities of urban individuals, communities, governments and industries. In effect, this is both an assertion of the need for local action to address environmental problems and a reflection of the increasingly urban nature of consumption and production practices in developed and developing countries. As a result, the terms 'local' and 'urban' sustainability are used interchangeably. Second, it is argued that cities are places in which efficient solutions can be found, and where win–win solutions between economic, environmental and social objectives may be possible (Breheny 1992; Capello *et al.* 1999; Gilbert *et al.* 1996; Jenks *et al.* 1996; WCED 1987). Moreover,

> local governments with their many and varied roles are in a strong position to advance the goals of sustainable development as direct or indirect providers of services, regulator, leader by example, community informer, advocate, advisor, mobilizer of community resources and initiator of dialogue and debate.
>
> Satterthwaite 1997: 1682

However, delivering local sustainability is not seen as a task for local government alone. Echoing the arguments used to support decentralization within green political thought, addressing sustainability at the local level is seen as a means of facilitating partnerships between different organizations and community participation. The twin goals of partnership and participation are valued both intrinsically (that is, they should be goals of

sustainability in their own right) and because it is unlikely that governments can implement the required solutions alone. Despite the apparent coherence of this rationale and its articulation in international agreements, national programmes and local initiatives for sustainable development, considerable controversy remains as to what sustainable cities or urban sustainability means in practice.

Satterthwaite (1997) succinctly poses the question: what are sustainable cities – an entity in themselves, or cities that contribute to the wider goal of sustainable development? While most analysts reject the first approach, with its connotations of self-sufficient communities, there are several different means through which the contribution of cities to sustainable development can be directed and assessed. At issue is the question of what should be sustained, and for whom. On the one hand, analysts working in cities in developing countries argue that too much attention within the sustainable cities literature has been paid to issues which are ephemeral compared to the day-to-day needs of poor people (Mitlin and Satterthwaite 1996: 26–27). On the other hand, most analysts concur that the key to urban sustainability is addressing local needs and global issues simultaneously (Hall and Pfeiffer 2000; Haughton and Hunter 1994; Satterthwaite 1997). Whether such goals can be reconciled is a moot point, and one to which we will return throughout this book. Another point of contention is the means through which the goals of urban sustainability should be pursued. While several ideal-type models have been proposed (Evans *et al.* 2001; Haughton 1999a, 1999b), in practice attention has primarily been directed to either considerations of how urban form and processes could be redesigned in order to contribute to sustainable development, or to the calculation of resource use and waste production for cities and measures to move these processes on to a more ecological footing. For example, extensive discussion has been conducted over the appropriate size and density of cities in order to pursue sustainability (Breheny 1996; Jenks *et al.* 1996; de Roo and Miller 2000), and to the calculation of resource and waste flows, or ecological footprints, for a particular city (Capello *et al.* 1999; Giradet 1999; Ravetz 2000). In these approaches the goals of sustainable development are usually defined in terms of reducing resource use, or environmental degradation, while maintaining economic and social outputs at the urban scale. Central to this project is the modelling and monitoring of resource flows, and the assessment of a series of indicators which relate to the goals of sustainability. Strategies for changing current patterns of resource consumption and waste usually rest on the development of new technologies or discrete projects, or the import of best practice from other cities, partnership initiatives with local businesses to improve resource efficiency, and public information on particular issues to persuade individuals to take action. Marvin and Guy (1997) suggest that, taken together, these approaches represent a 'new localism' which has come to dominate the urban environmental debate since Rio. Although, as Gibbs (1998) argues, the coherence of the new localism may be overstated, and debates on urban sustainability have become more nuanced, elements of this approach permeate policy and academic thinking on the issue of sustainable cities.

Two broad critiques of the new localism can be made. The first concerns the nature of the prescribed model for a sustainable city, while the second focuses on how the local scale has been conceived. Within the new localist approach, commentators suggest there is a tacit assumption that an ideal (physical) model of a sustainable city can be identified, and hence there exists an end goal to which policy and research effort should be directed (Gibbs 1999; Guy and Marvin 1999). For example, Capello and colleagues (1999: 10) argue, somewhat tautologically, that 'urban economies can be called sustainable if two conditions are met: (i) they should be internally sustainable … and (ii) their claim to

resource bases elsewhere should not exceed their environmental utilisation space'. Meanwhile Ravetz (2000: 10) suggests that a 'city or region which contains its own eco-cycles would tend to be less vulnerable and damaging, or more "sustainable" '. In turn, the assumption is that with the application of particular (largely technocentric) policy measures, often considered as 'best practice', desired outcomes can be achieved. Not only does this approach assume a linear and rational model of the policy process, it suggests that local sustainability can be achieved through the imposition of strategies and objectives in a top-down fashion. Interestingly, this seems to run against one of the key tenets of LA21, that local communities in partnership with local authorities and other stakeholders should determine local goals and processes for sustainability (Smith, J. H. *et al.* 1998). It also fails to acknowledge the changing nature of local governance, where local government is increasingly taking the role of facilitating action by other stakeholders rather than imposing prescriptive policy agendas. Moreover, within the policy literature more broadly, there has been a move away from rationalistic assumptions about the policy process towards analyses of the role of policy networks and coalitions in constructing policy stability and change, and a recognition of the ways in which policy processes and outcomes are contested (Fischer and Forester 1993; Guy and Marvin 1999; Hajer 1995; Marsh and Rhodes 1992; Owens and Cowell 2002; Rhodes 1997).

The second critique concerns the way in which the local scale has been conceptualized within the sustainable cities literature. Marvin and Guy (1997: 312) suggest that the importance of locality as a means through which to address sustainability is often asserted as self-evident. This may be an unfair generalization, for in much of the literature the rationale for addressing environmental issues at the urban scale is clearly set out as described above. However, Gibbs and Jonas (2000: 299) suggest that often this rationale is justified 'in a pragmatic manner (and in a rather circular argument) by reference to national and international environmental policy initiatives that have emphasized this scale as the most appropriate for policy intervention'. In any case, questions can be raised as to the assumptions behind the emphasis on the local scale, and the extent to which it precludes an analysis of the ways in which different forms of governance interact. Despite the assertion that sustainable cities are not self-contained and should contribute to sustainable development at local, regional, national and global levels, the policies proposed to address urban sustainability, such as changes to urban density, frequently remain tied to a bounded idea of the local. This notion that the local is bounded – a fixed spatial entity – leads to three further assumptions (Marvin and Guy 1997). First, that the resource use and environmental degradation of a local place can be calculated; second, that local government is the most suitable actor to effect decisions concerning sustainability inside these boundaries; and third, that a distinct local community exists, which can be mobilized in the cause of sustainability. In short,

> Conceptually the locale is seen as a socio-spatial container in which the sum of institutional, social and physical relations necessary to achieve a more sustainable future can be found. The local becomes a 'black box', disconnected from the global, international and national contexts within which localities are framed.
>
> Marvin and Guy 1997: 312

While the new localist approach recognizes that the environment crosses between scales in complex ways, so that local issues contribute to global problems and vice versa, the interaction between economic, social and political processes across different levels and

systems of governance are ignored (Gleeson and Low 2000a). Questions as to whether or not to include the aluminium smelter of an international firm within a city's ecological footprint are not merely technical, but point to the political and economic processes which affect local and global sustainability and which locate at different scales simultaneously. By bounding the local as a discrete scale, the sustainable cities literature does little to challenge the cascade model of global environmental governance (see Figures 2.1 and 2.2). Instead, it simply reverses the hierarchy of international relations to privilege the local as the focus for action on global environmental problems.

The application of top-down, technocentric models, together with a bounded understanding of the local, lends the sustainable cities literature a tendency to wish-lists of measures which should be introduced in order to achieve urban sustainability (Hall and Pfeiffer 2000; Haughten and Hunter 1994). While these may be helpful in terms of imagining the possibilities of urban sustainability, they offer little by way of analysis as to the problems and opportunities for realizing such goals. Likewise, there is a tendency to assume that measures and projects developed in one place, often defined in terms of best practice, can be readily translated into different social, political and economic contexts. Rather than viewing the sustainable city as a discrete end goal, attention needs to be directed to the ways in which environmental, economic and social objectives for cities are being constructed and contested through processes of urban change (Guy and Marvin 1999). Far from being a one-way process of implementing specific projects and assessing their impact, this approach calls for an analysis of the ways in which ideas about local sustainability are being framed, questioned, enacted and resisted, by whom, and with what effect. This critique of the literature on sustainable cities does not suggest that local governments, communities and other actors are not important in shaping (urban) environmental governance. Instead, it suggests that the frame of analysis can not rest at a local level, but will have to take account of the complex ways in which global environmental governance is mediated between local, national and global scales. In conclusion, we consider what this might entail for the examination of transnational networks of subnational government.

## Governing between the local and the global

Through LA21, various initiatives within the European Commission, and individual local authorities, responsibility for addressing sustainability at global and local levels has, at least in part, been allocated to local governments and communities. Subsequently, there has been growing interest in the concept of sustainable cities and other initiatives at the local level, in particular the growth and development of LA21, as an arena through which environmental governance takes place. For example, Agyeman and Evans (1994: 2) suggest that local authorities have 'initiated and experimented in a number of creative and innovative ways, to the extent that they can collectively be described as constituting the greatest repository of environmental knowledge and experience currently existing in Britain'. While, in the light of hindsight informed by the realities of local action on sustainable development during the 1990s (Gibbs *et al.* 1998) this may seem overly optimistic, the engagement of local authorities with sustainability clearly warrants further attention.

However, as illustrated above, local authorities have not been conceptualizing and enacting sustainable development in isolation. One of the key features of the post-Rio era has been the growth in transnational and national networks of subnational governments (often also involving non-state actors) through which information and experience are

exchanged, lobbying takes place, and other representations of the collective potential and problems of local government are made. The establishment of links and networks between local governments has occurred throughout the second half of the twentieth century (Gilbert *et al.* 1996: 92), but it has only been since the early 1990s that these networks have taken on a distinctively environmental agenda. This development has occurred at a time in which local government networks have become more professionalized, systematic and complex, as well as increasingly focused on substantive issues and concrete objectives (Gilbert *et al.* 1996: 92).

In 1990, ICLEI was established by the IULA and the UNEP to represent the environmental concerns of local government internationally. Also in 1990, the EU Green Paper on the Urban Environment suggested that fostering links between cities in Europe would be one means of addressing urban environmental issues. The idea was to 'draw on existing networks to implement the programme and to filter through ideas, but also to create a new network platform, the Sustainable Cities Network' (Ward and Williams 1997: 451). ICLEI and the European Sustainable Cities and Towns Campaign now represent the largest environmental transnational networks of subnational governments. However, there exist numerous other environmental networks working at transnational and national levels and focusing on one or more key issues. For example, Ward and Williams (1997) suggest that by the mid-1990s there were twenty-eight such networks in Europe alone. The significance of these networks for global environmental governance must not be taken for granted. The vast majority of political attention and effort on global environmental governance is still directed through international and national institutions, with little recognition of the role of subnational governments. For example, 'neither the Framework Convention on Climate Change nor the Convention on Biological Diversity mentions the role of local government or even of local action. Responsibility for implementation is given exclusively to … the traditional sole actors in international agreements, nation-states' (Gordon 1994: 138). The impact and implications of specific networks remains to be seen in particular issue areas and places.

### *Multilevel governance*

Such subnational networks represent a form of environmental governance, taking place simultaneously across scales, which is not easily captured by either the international relations or sustainable cities perspectives outlined in this chapter. As argued above, international relations approaches tend to ignore subnational levels of governance, due in part to the continuing view of the state as a discrete and national entity, but also because of the focus on the role that non-state actors play in global environmental governance. In contrast, the literature concerning sustainable cities has tended to focus on the internal flows and processes of urban areas, and to neglect the social, economic and political contexts within which cities and local authorities operate. In each case, the model of governance is essentially hierarchical; a cascade of responsibilities and powers passed between different discrete levels (see Figures 2.1 and 2.2).

An alternative approach for understanding the role of subnational governments in policy-making might be found in the concept of 'multi-level governance'. Originally developed as a means of analysing policy development within the EU (Hooghe and Marks 1997), the term has since been developed and extended to other political arenas. In its original formulation, the argument was made that the role of national governments within the EU was diminishing, and in their place a new, multi-level, system of governance was

taking shape (Jordan 2001). Proponents argue that this system has emerged because: nation-states no longer monopolize policy making, given that supranational bodies have an independent influence over these processes; the need for collective decision making over complex problems leads to a loss of control for nation-states; and supranational, national and subnational political arenas are interconnected through policy networks (Hooghe and Marks 1997; Svedin *et al.* 2001). In parallel to wider debates concerning the changing role of the nation-state, which we discussed above, the result is seen to be a hollowing out of the nation-state, as authority is relocated upwards, to the institutions of the EU, and downwards, to subnational governments. However, the 'multilevel governance model does not reject the view that state executives and state arenas are important or that these remain the *most* important pieces of the European puzzle' (Hooghe and Marks 1997: 23, original emphasis). Rather, overlapping competencies, as well as the interaction of political actors and formation of policy networks across levels, means that state executives are 'one among a variety of actors contesting decisions that are made at a variety of levels' (Hooghe and Marks 1997: 23).

Critics have taken issue both with the novelty and explanatory power of the concept of multi-level governance, suggesting that while it may provide a descriptive model of policy-making in some sectors and at some stages of decision-making, it has yet to offer a 'general account of how (parts of) the EU operate(s)' (Jordan 2001: 204). Despite the attention given to the subnational level, local governments are seen primarily as responding to opportunities created through the dynamics of interactions between the EU and nation-states, rather than as having their own agency in these processes (Jeffery 2000). At the same time, however, the approach has been criticized for attributing too much influence to subnational governments within structures of decision-making in the EU, on the basis of increased levels of mobilization (Jeffery 2000; John 2000; Jordan 2001). Moreover, despite the emphasis on the multi-level nature of governance, the approach has tended to look inward, neglecting international arenas and how they shape the internal dynamics of governance within the EU (Jordan 2001: 201–202).

From its rather specific beginnings, the term multi-level governance has been developed and expanded to encompass a wider range of governance systems, both within and beyond traditional state boundaries (Peters and Pierre 2001). In the light of debates concerning the 'hollowing out' of the state, the notion that governance is no longer the sole province of the nation-state and that it occurs at multiple tiers and through multiple institutions has gained currency. Although the literature on new forms of governance is diverse, Hooghe and Marks (2001) argue that two different, and not necessarily exclusive, visions can be identified. The first 'conceives of dispersion of authority to a limited number of non-overlapping jurisdictions at a limited number of levels' (Hooghe and Marks 2001: 4). In essence, this vision has much in common with the original conception of multi-level governance and is seen to be appropriate for the analysis of governance within territorial states, as well as the EU, where, despite their multiplication, hierarchical and discrete levels of governance persist. If the first vision of governance focuses on the distribution of authority to supranational and subnational levels, the second is equally concerned with the interactions between state and non-state actors. In this picture, the 'neat scales, or levels, or tiers, disappear – they meld into one another. There is no up or under, no lower or higher, no dominant class of actor; rather, a wide range of public and private actors compete or collaborate in shifting coalitions. This is like Escher's famous lithograph of incongruously descending and ascending steps' (Hooghe and Marks 2001: 7). While this metaphor runs the risk of suggesting that such forms of governance are more a theoretical

construct than a reality, Hooghe and Marks (2001) suggest that it is at the boundaries of formal politics, in relations between state and non-state actors, and between national and international politics, that such forms of governance are emerging. Rosenau (1997), a key proponent of this view, argues that governance at the frontier of domestic and foreign politics is conducted through 'spheres of authority', which may be territorially based or non-territorial networks, that compete and co-operate through the exercise of formal and informal authority. This more flexible interpretation of governance, which we term *multi-level*, captures both the multiple levels at which governance takes place, and the myriad actors and institutions that act simultaneously across these levels.

### *Network governance*

Networks are central to many accounts of the emergence and nature of these forms of governance (Castells 1997; Jessop 1995; Rhodes 1996, 1997). As O'Riordan and Church argue:

> Governance is no longer ordered or hierarchical. In the response to global change, active agents in local communities seek partnerships and coordinated programmes of action through various levels of government from local to multinational. The fluidity of governance offers opportunities and threats to various social groups, depending on their access to resources and support, and on their collective capacity to identify and accommodate change.
>
> O'Riordan and Church 2001: 22

Indeed, as Leach and Percy-Smith (2001: 30) suggest, in some cases 'networks have been perceived … as almost a defining characteristic of the new governance'. Given the nature of the CCP programme as a transnational network of local authorities, debates within the literature on policy networks and transnational networks/global civil society provide a basis for analysing its nature and role in global environmental governance. In particular, these debates allow us to assess how participation within the CCP programme is secured and maintained, and how the programme promotes policy learning[4] and change.

The connections between new forms of governance and network organization have perhaps been most developed through the concept of 'policy networks' (Marsh and Rhodes 1992). Policy networks arise as interest groups gather around one or more government departments in the hope of influencing policy and are integrated into the policy-making process by the state, which needs their participation 'to make, legitimize and eventually implement policy' (O'Riordan and Jordan 1996: 74). The institutionalized patterns of interaction within the policy network in turn structure policy outcomes and individual actor behaviour (Zito and Egan 1998: 96). Policy network types exist on a continuum (Marsh and Rhodes 1992; O'Riordan and Jordan 1996). At one end is the close-knit policy community that centres on one government department. The more weakly institutionalized issue network occupies the other end of the continuum, where there is broader access to the policy process, less permanence and stability, more than one government department involved, and less consensus on the issues at hand and how they should be addressed. The formation and maintenance of policy networks stems from mutual dependence among network members, both on specific material resources and because in order to achieve policy outcomes with a minimal level of conflict, government 'needs the assistance and co-operation of other groups' (Smith, A. 1997: 35).

The nature, applicability and analytic potential of the policy networks concept have been debated widely (Borzel 1998; Dowding 1995; Marsh and Rhodes 1992; Zito and Egan 1998). Concerns have been raised that there has been insufficient attention given to how networks are formed (MacLeod and Goodwin 1999: 512) and how policy change occurs through networks (Bulkeley 2000a; Jordan and Greenaway 1998). To date, the approach has primarily been used to analyse the policy process surrounding particular sectors within the nation-state, and interactions between local and national government, private, voluntary and public sector organizations. However, in order to explain the politics of climate change, the policy network concept faces two challenges. First, as O'Riordan and Jordan (1996: 75) argue, the pervasive nature of climate change creates a 'policy mess': 'a situation where different policy communities manoeuvre within a much wider issue network and the government is forced to coordinate policy across a wide range of departments and interest groups'. In such cases, a tiered policy network, where different types of networks exist simultaneously and interact, may be more appropriate than any one ideal type (Bulkeley 2000a). Second, climate change policy networks do not exist solely at the national level; rather, the international, regional, national and local interact 'with actors influencing the activities of different levels simultaneously' (O'Riordan and Jordan 1996: 101). Although some analysts have begun to apply the concept of policy networks across national borders in the context of the EU (McLaughlin and Maloney 1999; Ward and Williams 1997), in the main analysis remains focused on the nation-state as the arena of political conflict. While the concept of policy networks could be developed to take account of the multisector, multilevel, nature of climate change politics, its relevance to the analysis of the CCP programme is less clear. On the one hand, the concept is not directly applicable to the CCP programme, as it is not a policy network itself but rather forms part of policy networks surrounding climate change in different places and at different levels of governance. On the other hand, debates about how participation is secured and learning takes place within policy networks can inform our analysis of the CCP programme. We return to these issues in Chapter 12.

Within the field of international relations, as we discussed above, there have been various attempts to develop the concept of networks within the context of global environmental governance. Importantly for our analysis of the CCP programme, transnational networks are seen to consist of actors operating at multiple levels simultaneously. However, while some authors acknowledge that transnational networks may include governmental actors (Keck and Sikkink 1998; Risse-Kappen 1995a), most discussions privilege the role of non-state actors as central and assume a clear separation between state and non-state actors. Moreover, the importance of transnational networks is seen to lie in their capacity to influence states and inter-state organizations (Keck and Sikkink 1998; Risse *et al.* 1999; Risse-Kappen 1995a). Such an analysis therefore offers only a partial insight into the nature and influence of transnational networks of local authorities.

In contrast, Lipschutz (1996, 1997a, 1997b) suggests that emerging networks within global civil society not only shape the range and extent of state action, but are an important site for the governance of global environmental issues in their own right. He views the rise of transnational networks 'as a manifestation of the diffusion of governance away from a concentration in the state to both the global and local levels' (Lipschutz 1997b: 446). This understanding of the role of networks in global environmental governance – a 'partnership' or 'glocal' approach – most accurately describes the nature of transnational networks such as LA21, Habitat II or the CCP programme (Low *et al.* 2000b: 285). This approach has much in common with the second form of multilevel governance discussed

above, though the latter provides a more explicit role for subnational governments in processes of transnational governance (Hocking 1999). However, in emphasizing the local–global nature of such networks, there is a danger that the role of the state in shaping climate change politics is neglected, a point to which we return in Chapter 12. Moreover, while this 'glocal' approach offers a description of emerging patterns of network governance, whether, and how, networks are influential remains moot. Accounts of the roles of transnational networks and of global civil society in processes of global governance stress that political authority accrues to networks through their ability to garner and deploy information, ideas and values (Lipschutz 1996), with recourse to persuasion and the sanction of 'shame' at non-compliance with agreed norms and values (Low *et al.* 2000b: 285). In turn, it is argued that through these means transnational networks can transform 'the terms and nature of the debate' (Keck and Sikkink 1998: 2), in effect creating policy learning and change. In the light of the case-studies presented in Part 2, we consider in Chapter 12 how these processes have taken place within the CCP programme.

## Conclusion

Transnational networks of local governments challenge our accepted models of global environmental governance, and demand that we take an approach to analysis which accounts for the interactions between formal territorial structures of government, international regimes, state and non-state actors, and networks which act at multiple levels, crossing over scales and boundaries. A concept of multilevel governance, where networks of relations between different levels of governance both constitute the context and the means through which governance takes place, provides a framework for such analysis. However, as Low *et al.* (2000b: 286) suggest, 'if we are contemplating a new form of governance shaped as an intermediate network, then the key questions relate to the thickness and extent of the network'. The importance of such networks as a means through which local and global environmental governance is taking place can not simply be taken for granted from an acknowledgement of their existence. Rather, we need to explore both the range of actors and institutions involved in such networks, and the extent to which networks are (successfully) 'governing' global environmental problems. In Part II of this book, we examine six case-studies of cities which have been part of a specific network, the CCP programme run by ICLEI, in order to assess the ways in which the local governance of climate change takes place and the role of transnational networks in these processes. Before we examine these case-studies, and their implications for our understanding of transnational networks and multilevel governance (see Chapter 12), we will consider in Chapter 3 the political context of climate change at global, national and local scales, and outline the CCP programme in more detail.

# 3 The politics of climate change
## Global to local

The governance of climate change occurs at multiple levels, from the global to the local. While much attention has been directed to the negotiation of two multilateral treaties, the UNFCCC and the *Kyoto Protocol*, it is increasingly clear that implementing the terms of these agreements will require nation-states to strengthen their domestic commitments to controlling greenhouse gas emissions. In addition, there is growing awareness that any global response to climate change must involve local action, since 'the human activities that can lead to climate change are very local' (Wilbanks and Kates 1999: 612). In this chapter, we examine efforts to mitigate climate change at the global, national and local levels, including an analysis of the CCP programme. We illuminate the ways in which these levels interact, illustrating the fact that global environmental governance is a complex, multilevel process. The final section of this chapter identifies issues and questions for analysis in the remainder of the book, as we consider the contribution of the CCP network to the governance of climate change.

### Global climate change politics

Since the late 1980s, climate change politics at the global level has largely focused on the development of an international regime, consisting of principles, norms, rules and decision-making procedures (see Box 3.1). The core of this regime consists of two multilateral treaties: the 1992 UNFCCC and its 1997 *Kyoto Protocol*. Together, these agreements have served to define climate change as a legitimate international concern and to establish that members of the international community have an obligation to mitigate this threat by controlling their greenhouse gas emissions. In this section, we examine the contested process through which these agreements have been reached, and review the influence of particular state and non-state actors in the climate change regime.

#### *Emerging concerns*

While the issue of climate change has been discussed in scientific circles for more than 150 years, it was not until the late 1980s that it emerged as an international political concern. Between 1988 and 1990, scientists, governments and non-state actors held a series of meetings to discuss the issue and to identify ways of dealing with the threat on a multilateral basis. One of the first efforts to facilitate international political co-operation on climate change was the 1988 World Conference on the Changing Atmosphere: Implications for Global Security (often referred to as the Toronto Conference). Sponsored by the Canadian government, this brought together government officials, environmentalists, scientists and

industry representatives to discuss a package of atmospheric issues, including ozone depletion, acid rain and climate change. However, due to a series of events in the summer of 1988,[1] climate change took centre stage. The conference statement began:

> Humanity is conducting an unintended, uncontrolled, globally pervasive experiment whose ultimate consequences could be second only to global nuclear war. The Earth's atmosphere is being changed at an unprecedented rate by pollutants resulting from human activities, inefficient and wasteful fossil fuel use and the effects of rapid population growth in many regions. These changes represent a major threat to international security and are already having harmful consequences over many parts of the globe.
>
> WMO 1988: 292

Participants determined that in order to mitigate the threat of climate change, countries should reduce their carbon dioxide emissions to 20 per cent below 1988 levels by 2005. The so-called 'Toronto target' became influential at international, national and local levels, by establishing the need to develop targets and timetables for reducing greenhouse

**Box 3.1: Key events in global climate change politics**

| | |
|---|---|
| June 1988 | Toronto Conference: established the 'Toronto target' of reducing greenhouse gas emissions to 20 per cent below 1988 levels by 2005 |
| Feb. 1991–May 1992 | Intergovernmental Negotiating Committee negotiated the UNFCCC |
| June 1992 | Rio Conference: UNFCCC signed by more than 150 states |
| March 1994 | COP-1, Berlin. The Berlin Mandate established a process for negotiating a protocol to the UNFCCC |
| Sept. 1995–Dec. 1997 | Ad Hoc Group on the Berlin Mandate negotiated the *Kyoto Protocol* |
| Dec. 1997 | COP-3, Kyoto. *Kyoto Protocol* agreed upon |
| Oct. 1998 | COP-4, Buenos Aires. The Buenos Aires Plan of Action established a plan for finalizing the rules of the *Kyoto Protocol* by COP-6 |
| Nov. 2000 | COP-6, part I, The Hague. Talks broke down due to disagreement over sinks |
| March 2001 | US President George W. Bush Jr called the *Kyoto Protocol* 'fatally flawed' and withdrew from future negotiations |
| July 2001 | COP-6, part II, Bonn. Parties adopted the Bonn Agreement, a political deal over a package of decisions aimed at finalizing the rules for implementing the *Kyoto Protocol* and making it possible for industrialized countries to begin ratification |
| Nov. 2001 | COP-7, Marrakesh. Parties adopted the Marrakesh Accords which formalized the Bonn Agreement |

gas emissions as the appropriate response to the threat of climate change. The conference prompted unilateral action on the part of some nation-states, and raised the political profile of the issue. Shortly after the Toronto Conference the IPCC was created, with the task of reporting on the state of climate change science, impacts and responses. The 1990 report of the IPCC represented the strongest scientific consensus to date on the effect of rising concentrations of greenhouse gases, stating with certainty that such a process would result in additional warming of the Earth's surface. This report was endorsed by scientists and politicians at the Second World Climate Conference[2] in 1990, although they had different views on the severity and immediacy of the problem. Nevertheless, by the end of 1990, political momentum was such that 'negotiations towards an international convention were virtually unavoidable' (Paterson 1996: 48).

### *Negotiating the UNFCCC*

The process of formally negotiating an international climate change treaty began in December 1990, when the UN General Assembly established the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change (INC). The INC met six times between February 1991 and May 1992, and, after months of vigorous debate, adopted the UNFCCC, which was signed by more than 150 states at the 1992 Rio Conference. By the end of 2001, the UNFCCC, which entered into force in March 1994, had 186 Parties (nation-states that have signed and ratified the agreement).

Under the UNFCCC, the objective of the international climate change regime is 'stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system' (UN 1992). The major area of debate during the UNFCCC negotiations concerned the nature and level of industrialized country commitments for controlling greenhouse gas emissions. The US firmly opposed binding targets and timetables and argued for a comprehensive approach focused on all greenhouse gases, rather than just carbon dioxide. The US proposal would have allowed countries to count reductions in ozone-depleting substances,[3] achieved under the Montreal Protocol, towards their greenhouse gas emissions reductions targets. In making this proposal, the US hoped to offset a 15 per cent increase in carbon dioxide emissions with its reductions of CFC emissions and claimed that under a comprehensive approach, it could stabilize its emissions of greenhouse gases at 1987 levels by 2000 (OPUS 1991).

The American position was shaped by a particular interpretation of the implications of scientific uncertainty about climate change, as well as concerns about the economic effects of controlling greenhouse gas emissions. In its First Assessment Report, the IPCC stated that while atmospheric concentrations of greenhouse gases had increased since the industrial revolution, it was not clear whether the cause was natural processes or human activities. White House Chief of Staff John Sununu, who co-ordinated the US negotiating position during most of this period, believed that climate change was not a serious threat but rather an attempt to promote a no-growth agenda (*New York Times* 1991; Stevens 1991). In addition, the threat of a global recession in the early 1990s shifted the focus from the environmental implications of climate change to the substantial costs of addressing the issue. In the US, a group of automobile and fossil fuel companies organized under the umbrella of the Global Climate Coalition (GCC) argued that measures to limit greenhouse gas emissions 'would impose severe and inequitable burdens on [the US] economy, our citizens and our competitiveness' (GCC 1991: 281). President Bush Sr clearly sided with the GCC, noting that '[w]e cannot permit the extreme in the environmental movement to shut down the United States' (*Guardian* 1992).

In contrast, several European countries, along with environmentalists and many developing countries, favoured binding targets and timetables for reducing emissions of greenhouse gases. Before 1988, no country had taken unilateral action to address climate change.[4] In its 1987 review of energy policies in Organization for Economic Co-operation and Development (OECD) countries, the International Energy Agency (IEA) made not a single reference to climate change in the entire publication (IEA 1988). In its 1989 report, however, the IEA notes that its members had agreed:

> that consideration should be given to the immediate implementation of measures to reduce $CO_2$ emissions that were economically viable in their own right. Most IEA countries have also expressed willingness to consider further actions as part of a broader international effort to reduce projected $CO_2$ emissions.
>
> IEA 1990: 47–48

Sweden was the first country to take domestic action, deciding in 1988 to stabilize carbon dioxide emissions at 1988 levels by 2000. Norway and the Netherlands followed shortly thereafter. It is interesting to note that in the early stages (1988–1990), many of the OECD countries (Australia, Austria, Denmark, Germany, Italy, Luxembourg, the Netherlands and New Zealand) adopted the Toronto target, committing to reducing carbon dioxide emissions to 20 per cent below 1988 levels by 2005. However, as national governments gained more experience in trying to control their greenhouse gas emissions, the initial enthusiasm for stringent standards began to wane. Between 1990 and 1992, individual countries adopted the slightly more conservative target of stabilizing carbon dioxide emissions at 1990 levels by 2000. In October 1990, environment ministers agreed to this standard for carbon dioxide emissions in the European Economic Community (EEC)[5] as a whole (Haigh 1996) and as an objective for international negotiations, a position reflecting the fact that most countries in the region had already adopted a domestic stabilization target in the aftermath of the Toronto Conference. Canada, Australia and New Zealand sought to bridge the gap between the US and European positions by proposing binding targets to stabilize all greenhouse gases not covered by the Montreal Protocol, rather than only carbon dioxide, at 1990 levels by 2000. Like members of the EEC, these countries had adopted domestic targets for reducing greenhouse gas emissions. However, they also shared the concern of the US about the economic effects of such actions. For example, in adopting its target, Australia included the caveat that achieving the target should not adversely affect its economy and should be done in the context of similar action by other countries. New Zealand, which had adopted a goal of reducing emissions of greenhouse gases by 20 per cent below 1990 levels by 2000, also made achieving its target contingent on the effects on its trade competitiveness (IEA 1994).

Negotiators made little progress in resolving these differences and by February 1992, there was mounting concern that Parties might be unable to reach agreement by the Rio Conference deadline. Marking a critical turning point, INC Chairman Jean Ripert tabled a compromise text at the final negotiating session. This text had been drafted entirely outside the UN negotiating arena. Michael Howard, UK Secretary of State for the Environment, went to Washington to meet his counterparts in late April 1992, and together they drafted a text that later became Article 4 of the UNFCCC (Bodansky 1994). Article 4.2(b) calls upon industrialized states to adopt policies and measures 'with the aim of returning individually or jointly to their 1990 levels of these anthropogenic emissions of carbon dioxide and other greenhouse gases not controlled by the Montreal

Protocol' (UN 1992). Technically, Article 4 does not set a strict timetable for controlling greenhouse gas emissions. Article 4.2(a) states only that Parties recognize 'that the return by the end of the present decade to earlier levels of anthropogenic emissions of carbon dioxide and other greenhouse gases not controlled by the Montreal Protocol would contribute to [mitigating climate change]'. The final UNFCCC text on commitments drew heavy criticism from environmentalists and developing countries, as well as other countries in Europe, who reportedly were not consulted on the draft text. Most observers agree that the final text was more a reflection of the US's position than that of other states. However, given that the US accounts for more than a quarter of global greenhouse gas emissions, and in the context of scientific uncertainty and a possible global recession, few states were willing to agree to a treaty without US support.

Only Germany, the UK and Russia have achieved the UNFCCC target of stabilizing greenhouse gas emissions at or below 1990 levels. In each case, however, such progress has been the result of unique economic circumstances rather than innovative climate policies. In the case of Germany, following reunification the government closed many of the inefficient industries in the East, thereby significantly reducing the overall emissions of the reunified Germany. Much of the industry in Russia closed due to economic collapse, bringing their emissions to 30 per cent below 1990 levels, and the UK benefited both from the virtual elimination of its coal industry and the building of combined cycle gas power plants following the deregulation of utilities (Grubb 1999: 81; Kawashima 1997; Paterson 1996: 69). In contrast, US greenhouse gas emissions in 1999 were 11 per cent above 1990 levels (EPA 2001a: 1–8), with the growth being attributed to unexpected economic growth and low energy prices during the 1990s (Department of State 1997).

### *The Kyoto Protocol*

At the first Conference of the Parties (COP)[6] to the UNFCCC convened in Berlin in March 1995, the majority of participants agreed that the commitments contained in the Convention were insufficient to meet its long-term objective of stabilizing atmospheric concentrations of greenhouse gases at levels that would prevent dangerous interference with the climate system. In part, this reflected the conclusions of the IPCC that stabilization of concentrations at current levels would require an immediate 60 per cent reduction in global greenhouse gas emissions (Houghton *et al.* 1990: xii). Despite opposition from the JUSCANZ group, comprising Japan, the US, Canada, Australia and New Zealand, the Berlin Mandate was adopted. This stated that current commitments were not sufficient, established a framework for negotiating a protocol by 1997 containing quantified emissions limitation and reduction objectives, and determined that no new commitments for developing countries should be introduced. COP-1 also established the Ad Hoc Group on the Berlin Mandate (AGBM) to co-ordinate this process. The AGBM, chaired by Ambassador Raul Estrada-Oyuela, met nine times between August 1997 and December 1997. At COP-3, held in Kyoto, Japan in December 1997, the *Kyoto Protocol* was agreed. The Protocol will enter into force when it has been ratified by at least 55 countries, including Parties accounting for 55 per cent of 1990 emissions from industrialized countries. As of 25 July 2002, the Protocol had 84 signatures and 76 ratifications. To date, 23 Parties, including those in the EU and Japan, which accounts for 36 per cent of greenhouse gas emissions from the industrialized countries have ratified the Protocol. That industrialized countries only began to ratify the Protocol some four years after it was agreed reflects the fact that the specific rules for its implementation were only agreed at COP-7 in 2001, and that, as we discuss below, the post-Kyoto negotiations have been highly contentious.

During the process of negotiating the Protocol, three key issues emerged: (1) who should be obliged to reduce greenhouse gas emissions, and in particular what the role of developing countries should be; (2) the extent to which emissions should be reduced by industrialized countries; and (3) how such reductions could be achieved. From the perspective of most Parties, other than the JUSCANZ group, the issue of developing country commitments had been resolved at COP-1. Critically, the question of developing country commitments remained a central part of the US negotiating position throughout the AGBM process, reflecting domestic politics during that time. In July 1997, the US Senate unanimously (95–0) adopted Senate Resolution 98, known as the 'Byrd–Hagel resolution', which made US ratification of a protocol contingent on meaningful developing country commitments. As a result, the US continued to push the issue and even succeeded in getting language on developing country commitments inserted into the final draft negotiating text. At 1:00 am on 11 December 1997 (the day after the scheduled end of COP-3), delegates began a marathon session in which they conducted an article-by-article review of the text. When the draft article on developing country commitments was introduced, Chairman Estrada made a unilateral decision to delete the language on the basis that it contradicted the Berlin Mandate.

There was also considerable disagreement on the level of emissions reduction targets for industrialized countries to be included in the Protocol. The US, whose position continued to be influenced by the GCC, argued that industrialized countries should be required to stabilize greenhouse gas emissions at 1990 levels within a five-year budget period. Critics argued that this position violated both the UNFCCC and the Berlin Mandate. Dr Mark Mwandosya of Tanzania, speaking on behalf of developing countries, stated that '[it] seems to me that the United States proposal is even less [than what was agreed upon in the UNFCCC]' (Stevens 1997), while environmentalists charged that in 'refusing to go beyond stabilization, Clinton's proposal violates the spirit and intent of the Berlin Mandate' (ECO Team 1997). In addition, the US position was inconsistent with the latest developments in scientific understanding of climate change. In its Second Assessment Report, released in 1995, the IPCC argued that 'the balance of evidence suggests a discernible human influence on global climate' (Houghton *et al.* 1996: vii). This finding effectively silenced debates within the negotiations as to whether humans were causing climate change and injected a new sense of urgency. In this context, the EU proposed that the Protocol should require industrialized countries to reduce their greenhouse gas emissions to 15 per cent below 1990 levels by 2010. This position was facilitated by the fact that a number of European industries came out in support of a strong climate policy during this period. The European Business Council for a Sustainable Energy Future, formed in 1996, included representatives of the energy efficiency sector, who hoped to use the Protocol as a market opportunity. In addition, a number of oil companies with headquarters in Europe broke away from the GCC during this period and lent their support to international efforts to limit greenhouse gas emissions. Sir John Browne, CEO of British Petroleum, noted that the climate change negotiations provided 'a moment for change and for rethinking of corporate responsibility' (Browne 1997: 3).

Japan, Canada, Australia and New Zealand proposed more modest reductions than the Europeans – between 3 and 5 per cent below 1990 levels. Like the US, these countries faced domestic opposition from industry and thus shared concerns about the economic implications of addressing climate change. The Japanese proposal included a 'differentiated' approach, under which targets would be set according to each nation-state's unique circumstances. Australia supported this proposal, which fitted with its own position,

arguing that 'the availability of electricity generated from non-fossil fuel sources, economic structure, transport requirements, climatic conditions and the like' constrained its ability to limit its greenhouse gas emissions compared to other OECD members (AGBM 1997: 5). The US, although initially sceptical, also supported a differentiated approach. The EU voiced its opposition to the Japanese proposal, though at the same time planned to employ a 'bubble' approach to meet its own commitment under the Protocol, using the cuts achieved in Germany and the UK to offset increases in greenhouse gas emissions in some of the poorer European states. The EU, in the face of much criticism, sought to distinguish its plan from the Japanese proposal by noting that it planned to use the bubble to achieve a more stringent reduction target while the Japanese proposal seemed designed to lower the overall reduction commitment (Battelli *et al.* 1997). Despite such protestations, internal climate change politics made it increasingly difficult for the EU to object internationally to differentiation.

The *Kyoto Protocol* contains differentiated commitments designed to achieve a reduction in aggregate emissions of greenhouse gases from industrialized countries by 5 per cent below 1990 levels by 2008–2012 (Table 3.1).[7] However, these targets neither accurately reflect the level of reductions countries could achieve (e.g. Russia has a stabilization target of 1990 levels despite the fact that its emissions were well below that level at the time of the negotiations), nor are they based on what the scientific community argues would be necessary to stabilize atmospheric concentrations of greenhouse gases at current or pre-industrial levels. Rather, these targets are widely recognized as purely political, the result of tough bargaining in closed-door sessions between the EU, the US and Japan during the final hours of COP-3. Each was viewed as a 'key' actor: the EU because it had been the first to propose serious targets and timetables for reducing greenhouse gas emis-

*Table 3.1* National emissions reduction targets in the *Kyoto Protocol*

| *Country* | *Emissions reduction (% below 1990 levels)* | *Country* | *Emissions reduction (% below 1990 levels)* |
|---|---|---|---|
| Australia | +8 | Liechtenstein | 8 |
| Austria | 8 | Lithuania | 8 |
| Belgium | 8 | Luxembourg | 8 |
| Bulgaria | 8 | Monaco | 8 |
| Canada | 6 | Netherlands | 8 |
| Croatia | 5 | New Zealand | 0 |
| Czech Republic | 8 | Norway | +1 |
| Denmark | 8 | Poland | 6 |
| Estonia | 8 | Portugal | 8 |
| EU | 8 | Romania | 8 |
| Finland | 8 | Russia | 0 |
| Germany | 8 | Slovakia | 8 |
| Greece | 8 | Slovenia | 8 |
| Hungary | 6 | Spain | 8 |
| Iceland | +10 | Sweden | 8 |
| Ireland | 8 | Switzerland | 8 |
| Italy | 8 | Ukraine | 0 |
| Japan | 6 | UK | 8 |
| Latvia | 8 | US | 7 |

*Source*: UN 1997.

sions; the US because of its role as the world's largest emitter; and Japan as the host of COP-3. In this context, the Japanese proposal of a differentiated 5 per cent reduction in greenhouse gas emissions was a logical compromise between the EU proposal of 15 per cent reductions and the US preference for stabilization.

The final area of debate during the *Kyoto Protocol* negotiations concerned how countries could achieve their reduction commitments. The JUSCANZ group argued for maximum flexibility and the use of market mechanisms to promote economic efficiency. Most industry representatives, to the extent that they supported international greenhouse gas emission regulations, also favoured using the market as much as possible. This position was based on the argument that, since it makes no difference to overall concentrations in the atmosphere, states should be encouraged to look for opportunities to achieve the greatest reductions of greenhouse gases at the lowest cost. The EU, with support from environmentalists and developing countries, objected to the use of flexibility mechanisms on the moral grounds that it would allow those industrialized countries (and in particular the US), who had been responsible for the vast majority of greenhouse gas emissions to date, to buy their way out of making changes in their consumption patterns at home, hence going against the 'polluter pays' principle. In the end, this issue was resolved through a trade-off between the US and the EU. The US agreed to accept reduction (rather than stabilization) targets for greenhouse gas emissions in return for the 'Kyoto mechanisms', including emissions trading, joint implementation and the Clean Development Mechanism (Box 3.2).

**Box 3.2: The Kyoto mechanisms (from Oberthür and Ott 1999)**

***Emissions Trading (Article 17)***

Nation-states in Annex B (those with binding commitments under the Kyoto Protocol) that exceed their allowed emissions can offset those increases by purchasing 'credits' from countries that stay below their allowed emissions.

***Joint Implementation (Article 6)***

Allows private actors in industrialized countries to invest in emissions-reducing activities in other OECD countries and countries with economies in transition. Credit for the 'emission reduction units' achieved by the project will count towards the acquiring Party's reduction commitment and be subtracted from the transferring Party's allowable emissions.

***Clean Development Mechanism (Article 12)***

Allows nation-states in Annex B to achieve compliance with their commitments under the Protocol by investing in emissions-reducing activities in developing countries and receiving credit for 'certified emission reductions'. A share of the proceeds from projects certified under the Clean Development Mechanism is to be used to offset the administrative expenses of the mechanism and to assist developing countries in reducing their vulnerability and adapting to climate change.

### *The road from Kyoto*

While the Protocol established a framework for achieving emissions reductions, it left many issues unresolved, such as the rules governing use of the Kyoto mechanisms, how to account for emissions absorbed by biotic sinks,[8] and what to do about non-compliance. Resolving these issues was essential, as industrialized countries were unlikely to ratify the *Kyoto Protocol* until they knew the 'rules of the game'. At COP-4, the Buenos Aires Plan of Action, a series of decisions aimed at resolving these issues by COP-6 was adopted. This proved easier said than done. When Parties arrived at COP-6 in The Hague in November 2000, they found themselves trying to negotiate more than 300 pages of highly technical text. After two weeks of almost continuous negotiation the talks collapsed, with most observers identifying questions related to the use of sinks as the ultimate reason for the failure (Grubb and Yamin 2001). The US, supported by Canada, Japan and Australia among others, wanted emissions credit for domestic activities on all managed lands that absorbed carbon dioxide and to include sinks projects in the Clean Development Mechanism. By some estimates, the US managed lands proposal would enable it to satisfy more than half its commitment under the Protocol without doing anything beyond business-as-usual. In contrast, the EU argued that caps on the use of sinks and other flexibility mechanisms would be needed in order to ensure that nation-states made meaningful reductions in their emissions of greenhouse gases.

In what seemed like a catastrophic blow to the *Kyoto Protocol*, in March 2001 newly elected President George W. Bush announced that the US would pull out of negotiations, stating that the agreement was 'fatally flawed'. This led some observers to prematurely declare the demise of the Protocol (Victor 2001). However, talks resumed among the remaining parties at COP-6 II, held in Bonn, Germany in July 2001, and a political agreement about how to move forward on the *Kyoto Protocol* was finally reached. The Bonn Agreement is a package of decisions aimed at clarifying the rules for emissions trading, financing, the contribution of sinks and compliance. Politically, the agreement was a tremendous victory. It demonstrated that the rest of the international community was committed to a multilateral approach to global climate change. As noted by the Iranian delegate, speaking on behalf of developing countries:

> The significance of what we have achieved here in Bonn does not merely relate to the climate change process and the further operationalization of the Convention and progress on the *Kyoto Protocol* – important as they are. Rather, it signifies the centrality of the concept of international cooperation for higher common objectives of the global community.
>
> UNFCCC 2001: 4

The political decisions of the Bonn Agreement were formalized at COP-7 in Marrakesh in November 2001. With the adoption of the Marrakesh Accords, Parties finalized the rules for implementation of the *Kyoto Protocol* and made it possible for industrialized countries to begin the process of ratification. A number of Parties had hoped that the Protocol would enter into force in time for the World Conference on Sustainable Development held in Johannesburg in September 2002. Achieving this goal was dependent on the Protocol being ratified by Russia, together with a combination of other countries (including, for example, Canada, Australia, New Zealand, Poland or Switzerland). While Poland announced its ratification at the Summit, Russia is not expected to complete its domestic process until the end of 2002, after which the Protocol will become legally binding.

## National climate change politics

As shown in the previous section, the international climate change regime has provided a forum in which, through negotiation between states and non-state actors, the ideas and interests of nation-states have been defined and contested. However, these processes also take place within domestic political spheres. An understanding of the domestic politics of climate change is therefore essential in order to make sense of the climate change regime. Moreover, the implementation of international agreements occurs within specific national contexts, so that the success of any international regime is dependent on domestic policy processes. This section examines climate change politics at the national level, focusing on the three industrialized countries from which our case-studies are drawn: the UK, the US and Australia. In each case, domestic efforts to address climate change are linked closely to debates about energy and transport policy, and have been shaped by larger discussions about the relationship between the economy and the environment.

### *The UK*

During the first half of the 1980s, in protracted disputes with the EEC and other member states over issues of acid rain, river and marine pollution, the UK became known as the 'dirty man' of Europe for its lack of action on environmental problems. In essence, the precautionary and mandatory approach adopted by the EEC to regulate environmental problems conflicted with the evidence-based, reactionary and voluntary approach taken within the UK (Hajer 1995; Jordan 1999).[9] However, by the second half of the 1980s, environmental issues, and in particular global atmospheric pollution, were receiving sustained government attention. In 1988, Prime Minister Thatcher expressed her own views about the importance of addressing climate change in a speech to the Royal Society. Since that time, the UK has taken a leading role in the international negotiations and has developed and implemented a domestic climate change strategy.

In the early stages of the formation of UK climate change policy, science and scientific advisors played a crucial role. Individual scientists are considered to have been influential in persuading Thatcher, and the then Conservative government, of the importance of the issue. Moreover, the uncertainty surrounding the issue suggested that further research would be needed before policy could sensibly be defined. The UK science community, with the encouragement of the government, became involved with the establishment and organization of the IPCC, and the Department of the Environment and research councils commissioned further research (Boehmer-Christiansen 1995). By funding and supporting research, and by assisting in creating the means to arrive at an international consensus on the dimensions of the problem through the IPCC, the government argued it was taking the issue of addressing climate change seriously. In the wake of the First Assessment Report of the IPCC, and the Second World Climate Conference, the UK took a leading role in negotiations for the UNFCCC and, as we suggested above, are credited with creating an agreement to which the US could sign up. While, in effect, this meant watering down the treaty, the importance of having all countries on board could be seen as paramount.

Domestically, the government set targets for the reduction of emissions of greenhouse gases and developed policy strategies through which this could be achieved. The 1990 UK sustainable development strategy, *This Common Inheritance* (DoE 1990), includes a target of reducing carbon dioxide to 1990 levels by 2005. In the lead up to Rio, a more stringent

target of meeting 1990 levels by 2000 was adopted, a target to which other members of the EEC had already agreed (Wynne 1993), and which was to form the basis of the UNFCCC. In devising a strategy to meet this target, the emphasis of the UK government was on improving the efficiency of energy use, particularly in the domestic sector (see Chapter 7). This has involved the promotion of voluntary action through: the creation of the *Home Energy Efficiency Scheme*, which gives grants for low-income households to improve energy efficiency; the establishment of the Energy Savings Trust to promote energy efficiency; public information campaigns; and the *Making a Corporate Commitment* campaign for industry (O'Riordan and Rowbotham 1996; Collier 1997b).

While a blanket carbon tax, such as that suggested by the European Commission, was rejected, two market instruments were introduced ostensibly to address climate change. The first, the imposition of VAT on domestic fuel and power, was initially introduced at the rate of 8 per cent in 1994, due to rise to 17.5 per cent by 1995. However, this measure met with vehement opposition, in particular from those who thought that the tax was regressive in that it would have a disproportionate affect on those on low incomes, and the proposed extension was dropped. In the same year, the rate of tax on transport fuel was increased by 10 per cent, with the government proposing to continue increasing this tax year on year. Until 1999, increases to this 'fuel duty escalator' were made every year. Whether or not energy taxes are an effective measure in reducing emissions of greenhouse gases remains hotly debated, with critics arguing that the elasticity of demand for travel and energy is so high that current levels of taxation have not led to significant changes in consumer behaviour. In addition to voluntary and market instruments, some regulatory measures have also been introduced in the UK. Changes to the Building Regulations have been made to improve the energy efficiency of new housing (see Chapter 7), and in 1994 Planning Policy Guidance (PPG) was introduced in an attempt to reduce the need to travel, and thereby reduce greenhouse gas emissions from the transport sector, the sector in the UK which has seen the largest growth in emissions over the past decade (see Chapter 6).

These measures to address energy use within domestic, industry and transport sectors were introduced against the backdrop of the privatization of the gas and electricity industries, and the bus and rail services. While the government argued that the introduction of market logic would remove barriers to the introduction of energy efficiency measures, commentators have responded that the incentives to sell more energy outweighed any advantages bought by privatization for energy efficiency in the domestic sector (Collier 1997b; Wynne 1993), and that the deterioration of public transport in the UK following privatization has driven more people on to the roads. However, one positive by-product of the privatization of UK energy production and supply, and the related collapse of the mining industry under the Conservative government during the 1980s, has been the 'dash for gas' – the investment in combined cycle gas power plants (Collier 1997b; Eyre 2001; O'Riordan and Rowbotham 1996). This fuel-switching has enabled the UK to reach its targets for stabilizing emissions at 1990 levels by 2000, and will be a significant factor in the UK meeting additional commitments adopted under the *Kyoto Protocol* of reducing emissions of greenhouse gases by 12.5 per cent, and the Labour government's 1997 pledge of reductions of 20 per cent below 1990 levels by 2010.

Throughout the 1990s, the UK has aligned itself with the position taken by the EU in international negotiations, although it has attempted to carve out a unique role in negotiating between the US and the EU. The personal interest and commitment of the Conservative Secretary of State for the Environment, John Gummer, earned the UK considerable respect at the international negotiating table. The incoming Labour Deputy

Prime Minister, John Prescott, similarly adopted a proactive approach to the Kyoto negotiations. Indeed, there has been considerable continuity in policy between the Conservative and Labour governments, though the windfall emissions reductions created by the dash for gas have enabled the Labour government to set (apparently) more stringent targets for emissions reductions. The policy focus has remained on improving energy efficiency in the domestic sector, and a new approach to the *Home Energy Efficiency Scheme* has recently been introduced to try to reduce fuel poverty and address climate change (DETR 2000a; see Chapter 7). Although the rate of VAT on fuel was reduced by the Labour government to 5 per cent, the fuel duty escalator increased over the first few years of their term in office. However, the fragility of this measure was exposed when protests by farmers and lorry drivers complaining about the price of fuel threatened to bring the country to a standstill after just three days; automatic year-on-year increases in fuel duty were duly abandoned. This does not mean, however, that the Labour government has rejected market mechanisms for addressing climate change. In April 2001, the Climate Change Levy on the non-domestic use of energy was introduced. After considerable negotiation with industry and local government, various rates of energy taxation have been agreed[10] (HMCE 1999). Some large energy users, such as the chemical and paper industries, are excluded from 80 per cent of the tax provided that they agree to, and meet, energy use reduction targets. The revenue which is raised is to be reinvested in energy efficiency and other mitigation measures, through the Carbon Trust. The scheme is in its infancy, and its impact on energy use in the UK remains to be determined.

From the advantageous position of having achieved its emission reduction targets, the UK has proven to be a powerful negotiator internationally. Furthermore, the constellation of domestic interests in the UK differs from those in Australia and the US, making it easier for the British government to enact policies and programmes related to climate change. Perhaps the greatest difference is the lack of a strong resource industry opposing efforts to control greenhouse gas emissions. In the UK, the manufacturing sector has declined in relation to the service sector, which has not only reduced the energy intensity of the economy but also shifted the locus of power towards those concerned with energy use rather than production. In addition, the insurance industry has been a strong supporter of greenhouse gas emissions regulations given its concerns about the negative effects of climate change impacts on the financial sector. However, conflicts between interest groups concerned with the continued use of fossil fuel energy and the implementation of policies to address climate change have surfaced. This is evident in the voluntary and market approaches adopted by the UK, and their fragility in the face of opposition, as well as in attempts by local authorities to address climate change, which we explore in depth in Part 2.

### *The US*

Efforts to develop climate change policies in the US date back to the late 1980s. Between 1987 and 1992, Congress held more than thirty hearings on the issue and members introduced more than thirty pieces of legislation. Ezzard (1991) notes that in 1989 there were more Congressional hearings on climate change than on any other issue. However, this interest did not translate into policy action. The US was the only industrialized country that failed to adopt a domestic commitment to control greenhouse gas emissions in the aftermath of the Toronto Conference. The priority for the US has clearly lain with international negotiations and scientific research (Brunner and Klein 1999). In fiscal year 2001, the US budgeted $1.7 billion for the US *Global Change Research Program* (SGCR

2001). In contrast, in 1993 the US proposed to spend $1.9 billion over six years on a series of programmes aimed at achieving voluntary emissions reductions (discussed below), although in 1997 this funding was cut by 40 per cent (Department of State 1997).

Climate change politics in the US has been heavily influenced by members of the fossil fuel and automotive industries under the umbrella of the GCC.[11] The GCC, which was formed in 1989, was a coalition of American trade associations from the petroleum, chemical, transportation, iron and steel production, and utility sectors. Headquartered in Washington, DC, the GCC billed itself as 'a leading voice for business and industry' on climate change issues and claimed to represent more than six million companies and businesses in the US (GCC 2001). The ability of the GCC to claim to represent American industry carried considerable weight in the American political system, where decision makers must pay attention to the concerns of their constituents, especially those with such economic clout. During the UNFCCC negotiations, the GCC strategy involved challenging the scientific basis for concern over climate change and emphasizing the potentially devastating effects of mitigating climate change on the American economy. According to GCC analyses, reducing greenhouse gas emissions by 20 per cent would cost the US economy $95 billion (Williams 1991). The GCC benefited from the fact that President Bush Sr's climate change policy was controlled by White House Chief of Staff John Sununu, who was receptive to their arguments. Sununu resigned his position as White House Chief of Staff in autumn 1991, but by then the GCC position was firmly entrenched both in the Administration and in Congress. In comments to the House Subcommittee on Energy and Power, Michael Baroody, Chair of the GCC, began, 'Mr. Chairman, I congratulate you for framing the climate change issue in the context of industrial competitiveness' (Baroody 1992: 175). This type of argument was central to the US rhetoric during the negotiations for the UNFCCC, indicating the powerful influence of the fossil fuel industry on the US negotiating position.

Many observers hoped that the victory of Bill Clinton and Al Gore in the 1992 Presidential election would result in a shift in the US position on climate change. Gore had been a vocal critic of the Bush Sr Administration during the UNFCCC negotiations and the Clinton–Gore campaign had raised the issue of climate change throughout the presidential race. Environmentalists, who had developed close ties with Gore during his years in the Senate, hoped to use their improved access to the White House to reshape US climate change policy. Indeed, the new Administration gave an early indication that it intended to take action to control greenhouse gas emissions. In the spring of 1993, Clinton introduced a proposal for an energy tax. However, this effort to take a mandatory approach was defeated by Congress (Bryner 2000). In the shadow of this defeat, President Clinton presented the *Climate Change Action Plan* in October 1993, which continued to be the centrepiece of US climate change policy throughout the 1990s (Clinton and Gore 1993). The *Action Plan* outlined more than fifty new and expanded programmes aimed at stabilizing US emissions of greenhouse gases at 1990 levels by 2000. It relied heavily on voluntary measures aimed primarily at business and industry, co-ordinated by the Environmental Protection Agency (EPA) as well as the Departments of Agriculture, Energy and Transportation. For example, the EPA and the Department of Energy jointly administer the *Energy Star* programme, which identifies and promotes energy-efficient products (see Chapter 8). However, these voluntary measures have not been successful in achieving their objective. According to the EPA, in 1999 US greenhouse gas emissions were 11 per cent higher than they had been in 1990 (EPA 2001a: ES-2). This increase has

been attributed to unexpectedly strong economic growth, low energy prices, unusually severe weather, the popularity of less fuel-efficient sport utility vehicles, as well as Congressional cuts in programmes for energy conservation (Bryner 2000; Cushman Jr 1997; Stevens 1995). Bryner (2000) highlights Congressional hostility to environmental regulation in general, and to climate change more specifically, as a major impediment to controlling greenhouse gas emissions in the US. In 1999, the Senate Budget Committee failed to allocate any funding for climate change initiatives and the House banned the use of federal funds in support of activities that could be seen as implementing the *Kyoto Protocol*, including efforts to educate the public about climate change.

Internationally, the Clinton Administration was unable to go beyond its predecessor. In what many saw as a hopeful development, in 1996 the US announced at COP-2 that it would accept binding targets for controlling greenhouse gas emissions in a protocol to the UNFCCC. In the autumn of 1997, members of the Clinton Cabinet embarked on a national tour to gain support for international commitments to reduce emissions of greenhouse gases. However, they soon realized there was little support among the American public, whereas there was a large, vociferous and well-financed constituency opposed to such commitments. The GCC, which had shifted its attention to lobbying Congress and the media when Clinton was elected, continued its strategy of challenging climate change science and highlighting the negative economic effects of controlling greenhouse gas emissions. One result of this activity was the Byrd–Hagel resolution, passed by the Senate in the summer of 1997, which made US ratification of the *Kyoto Protocol* contingent on the inclusion of 'meaningful' developing country commitments. In the fall of 1997, an ad hoc group of American companies, including the American Automobile Manufacturers Association, the National Association of Manufacturers and the United Mine Workers, sponsored a high-profile $13 million ad campaign arguing that an agreement without commitments from developing countries would devastate the US economy (BNA 1997). In effect, the GCC succeeded in dominating the domestic debate on climate change and constraining the ability of the Clinton Administration to enact progressive climate change policies at either the domestic or international level.

The US position on global climate change shifted yet again with the election in 2000 of President George W. Bush. Shortly after taking office, Bush announced that he would not follow through on a campaign promise to regulate carbon dioxide emissions at American power plants, and stated that the US would disengage from multilateral negotiations related to the *Kyoto Protocol* (Andrews 2001; *Financial Times* 2001; Meller 2001). He challenged the scientific basis for concern about climate change (an argument he retracted in response to assurances from his own scientists that the threat was indeed legitimate), criticized the lack of developing country participation in the *Kyoto Protocol*, and charged that limiting greenhouse gas emissions would hurt the US economy. In addition, the Bush Administration proposed a national energy plan that calls for the increased production of fossil fuels and limits investment to renewable energy sources (NEPDG 2001). The US position was not well received by members of the international community. The British press dubbed President Bush the 'toxic Texan', a delegation of EU environmental ministers travelled to Washington to try to persuade the Administration to change its position on the issue of global warming, and in May 2001, the US lost its seat on the UN Human Rights Commission, with many observers attributing the defeat at least in part to the US stance on the *Kyoto Protocol* (Allen-Mills 2001; Andrews 2001; Crossette 2001; Meller 2001). The international community has chosen to continue its efforts to implement the *Kyoto Protocol* without the US, and the British Prime Minister

Tony Blair has argued that the power of multilateralism used in the global fight against terrorism should be harnessed to address other issues such as climate change (Houlder 2001). Despite these pressures, the US continues to argue that the *Kyoto Protocol* is fatally flawed. In February 2002, Bush announced his *Clear Skies Initiative* in which he proposed a series of voluntary measures designed to reduce the carbon intensity of the US economy by 18 per cent over the next decade (Bush 2002). However, the plan does nothing to limit the overall level of emissions produced in the US and is likely to result in a 12 per cent increase in greenhouse emissions over that period. The plan does little to suggest the Bush Administration has any intention of moving from political rhetoric to policy action.

### *Australia*

> We have an obligation to defend and protect Australian interests, Australian jobs and Australian industry. We also owe it to future generations of Australians to play an effective role in the global reduction of greenhouse gas emissions.
>
> Prime Minister Howard 1997

The 1988 Toronto Conference provided the initial impetus for domestic policy on climate change in Australia. On 11 October 1990, the Federal Government adopted the Interim Planning Target, which committed the government to achieving by 2005 a 20 per cent reduction in greenhouse gas emissions not covered by the Montreal Protocol. Significantly, this aim was accompanied by the caveat that in attempting to reach such targets there should be no adverse effect on the Australian economy, and upon trade competitiveness in particular, in the absence of similar action by other countries. In 1992, Australia ratified the UNFCCC, accepting the responsibilities of all developed nations to reduce emissions to 1990 levels by 2000, and adopted the *National Greenhouse Response Strategy* (NGRS) in order to pursue these ends (Commonwealth of Australia 1992). In the initial stages of negotiating climate change responsibilities, the federal government was keen to show its willingness to undertake global environmental obligations. As the introduction to the NGRS makes clear, these obligations stem both from formal commitments under the UNFCCC and from the potential risk of climate change to 'Australia's natural, social and working environment, as well as … [to] the global community and global environments' (Commonwealth of Australia 1992). However, as illustrated in the statement above, from their inception climate change responsibilities have also been seen to involve the protection of Australia's economic interests, defined primarily as those concerning the energy and energy-intensive industries (Bulkeley 2001a; Commonwealth of Australia 1992).

The implementation of the NGRS proved problematic and criticism has been widespread. Wilkenfeld *et al.* (1995) argue that, by early 1995, federal and state governments had failed to implement actions from the NGRS, to establish any new strategies or programmes, or to assign clear responsibilities to a single authority. Instead, responses were left to ad hoc government processes and commercial decisions, and actions taken in the energy and resource sectors ran counter to the NGRS in both principle and practice, despite its focus on these sectors. Far from reconciling environment and development objectives anew, the end result of the NGRS was to maintain the status quo (Taplin 1996). Indeed, 'there is no evidence that the NGRS has saved one single tonne of greenhouse gas emissions which would not have been saved in any case for other reasons. In

other words, there has been no departure from "business-as-usual"' (Wilkenfeld *et al.* 1995: 4). By 1994, growing recognition of the shortcomings of the NGRS, coupled with a move towards a review of the UNFCCC, meant that climate change was back firmly on domestic and foreign policy agendas (Christoff 1998; Taplin 1996). Domestically, the federal government attempted to reinvigorate climate change policy with *Greenhouse Challenge*, a programme that encouraged companies and industry associations to sign up to voluntary, but externally audited, measures in return for publicity for their green credentials. The *Greenhouse Challenge* programme was also a key part of the additional federal government strategy *Greenhouse 21C*, which was introduced in 1995 to promote 'the wide range of short and long-term benefits that an effective response to greenhouse gas provides for the economy, as well as the environment' (Commonwealth of Australia 1995). The *Greenhouse Challenge* has been adopted by more than 100 large industries and industry associations. However, although signatories to the programme are committed to reducing greenhouse gas emissions, these gains are offset against the predicted growth of emissions-intensive activities. While emissions per unit of production are falling, there has been no attempt to challenge the rate of increase in production, thus total emissions are set to increase. The implications of additional reductions in emissions are not lost on the Australian government, and any moves to limit growth in emissions are explicitly excluded from the *Greenhouse Challenge* programme.

During the mid-1990s, Australia's international position evolved from endorsing the agreements reached through international negotiations, as it had done at Rio, to joining the JUSCANZ alliance in challenging the extension of international commitments suggested at COP-1. The acceptance of the Berlin Mandate by the Clinton Administration at COP-2 in 1996 left Australia isolated internationally with an increasingly entrenched view that any international obligations should be tempered by recognition of scientific uncertainty and the potential economic costs of action. Through insistence of economic vulnerability and a small overall contribution to global emissions, the federal government repeatedly stated that it 'would not "sell out" the national interest' to take on undue responsibilities (Hogarth and Dayton 1997; see also Howard 1997). In taking this stance the federal government is in effect aligning the interests of 'the nation' with the concerns of the resource-based industry coalition, which contends that taking action on climate change would be more economically damaging for Australia than for other OECD countries. The justification for these arguments lies in economic modelling which suggests that Australia would suffer significant job losses, reduction of gross domestic product (GDP) and savings losses in the order of A$9000 per Australian, in complying with a uniform target for emissions reductions (Hamilton 2000: 54). These findings have been contested, in terms of their ability to account for the potential economic savings of energy efficiency measures and the environmental costs of inaction, and their objectivity questioned due to the role of resource industries in sponsoring the modelling project (Bulkeley 2001a, 2001b; Commonwealth of Australia 1998a; Diesendorf 2000; Hamilton 2000). Despite this, they continue to hold significant influence over the position adopted by the federal government in international negotiations.

In the run up to Kyoto, the NGRS was reviewed and revised, with further 'no-regrets' measures, that is, measures which would have economic benefits as well as reduce emissions of greenhouse gases, developed in a draft *National Greenhouse Strategy* (Commonwealth of Australia 1998b). These included the extension of the *Greenhouse Challenge* programme to small and medium-sized industries, as *Greenhouse Allies*, and the inclusion of substantial funding for local government action on climate change, through

the establishment of a CCP-Australia programme (see Chapter 10). These measures, it was suggested, could reduce Australia's future emissions of greenhouse gases. The contradiction between Australia's domestic policy, which promotes the potential of no-regrets actions, and its international position, in which action on climate change is seen to have an unacceptable economic cost, is made clear by these figures: no-regrets actions are seen to have only a limited impact on business-as-usual. Controversially, the federal government entered into the Kyoto negotiations with the expectation that a target which allowed Australia to increase emissions would be an acceptable outcome (Yu and Taplin 2000). That this outcome was achieved – Australia has a target of only an 8 per cent increase from 1990 in emissions of greenhouse gases by 2010 (see Table 3.1) – owes more to the politicking which took place at Kyoto than to an acceptance on the part of the international community of the principle of differentiation as advocated by Australia.

In the aftermath of Kyoto, Australia continued to ally itself internationally with the position taken by the JUSCANZ group, arguing for the inclusion of sinks and flexible mechanisms in the Protocol at COP meetings, and maintaining the position that developing countries should participate in any international climate change agreement (Bulkeley 2001b). Domestically, the *National Greenhouse Strategy* has increased levels of funding for renewable energy projects and local government action, and led to a number of voluntary agreements with industry associations, for example car manufacturers and construction, to increase the energy efficiency of the economy. However, many of the specific measures contained within the Strategy bear a remarkable similarity to those included in the NGRS. Most, such as the provision of information, regulation, incentives and funding, embrace a no-regrets approach which favours 'efficiency' and fails to tackle issues surrounding the need and/or demand for energy or transport, effectively continuing business-as-usual but with a green edge. Whether this will enable Australia to meet its Kyoto target, or to go beyond this level of emissions reduction in the next commitment period, remains to be seen. While Australia argues that it intends to comply with the level of greenhouse gas emissions increase agreed at Kyoto, it has so far failed to ratify the Protocol. Moreover, it has been one of the few countries to welcome George W. Bush's stance, and has created a 'climate action partnership' to cement relations with the US (Environment Australia 2002), suggesting that ratification of the *Kyoto Protocol* is a distant prospect.

## Climate change politics at the local level

As argued in Chapter 1, nation-states will be unable to meet their international commitments for addressing climate change without local action. Greenhouse gas emissions originate from processes which are embedded in specific places, and it is often argued that the local is the most appropriate political jurisdiction for bringing about any necessary reductions in these emissions. Many local governments have considerable authority over land-use planning and waste management and can play an important role in transportation issues and energy consumption. Through strategic planning, zoning regulation and building permits, local governments can influence local development and encourage energy efficiency measures. They can also affect transportation choices through decisions related to supply of parking spaces and investment in road construction and public transport. These issues are particularly acute in cities, because half the world's population lives in urban areas and many more travel into cities to work each day. It is in cities that humans produce and consume fossil fuels for manufacturing, electricity, transportation

and household heating, accounting for 78 per cent of global carbon dioxide emissions (O'Meara 1999). In addition, cities are places where the vast majority of waste is created and disposed of, and local governments have significant influence when it comes to developing recycling programmes and managing landfills.

The importance of local action to address issues of global sustainability is now recognized at local, national and international levels. As discussed in Chapter 2, one of the most significant outcomes of the Rio Conference is the evolution of LA21. Various initiatives to address sustainable development, which frequently involve public participation and partnership between different local organizations, have been promoted under the general heading of LA21. In this light, it is argued that local governments, with their potential influence over people's day-to-day lives, may be more effective than nation-states in bringing about the changes necessary to control greenhouse gas emissions (DeAngelo and Harvey 1998; Wilbanks and Kates 1999).

Moreover, local authorities have considerable experience in addressing environmental impacts within the fields of energy management, transport and planning, and have undertaken innovative measures and strategies to reduce their impact on climate change. For example, the city of Toronto was one of the first municipalities to take on the challenge of mitigating global climate change at the local level (Harvey 1993). In 1990, the City Council unanimously passed a resolution committing the city to a 20 per cent reduction of carbon dioxide emissions, below 1988 levels, by 2005. To achieve this goal, the city established the Energy Efficiency Office, to collect and analyse emissions data and to coordinate efforts to reduce emissions, and the Toronto Atmospheric Fund, to pay for those efforts. Between 1990 and 1995, Toronto reduced its per capita carbon dioxide emissions by 7 per cent (Kates and Torrie 1998).[12]

More broadly, local governments have a range of policy options for controlling greenhouse gas emissions, though their power and influence varies across national contexts. In the energy sector, local governments can meet demand by using renewable energy sources, such as solar and wind power, and/or combined heat and power (CHP) systems linked to district heating grids. In Europe, a number of cities are expanding the use of CHP production, which involves the simultaneous production of heat and electricity, resulting in greater energy efficiency. For example, in Frankfurt, Germany, more than 40 units with a capacity exceeding 20,000 kilowatts have been installed by the local authority. In Australia, the Greater Dandenong Council powers its streetlights using only green power, which lowered its 2001 greenhouse gas emissions by more than 7,112 metric tonnes (CCP-Australia 2001).

Local governments can also encourage energy efficiency and energy conservation[13] through their role in land-use planning, by passing codes and ordinances establishing insulation and lighting standards for new construction, as well as retrofits of existing structures. In 1998, Tucson, US, passed a building code for new and renovated municipal buildings requiring that annual energy consumption be 50 per cent below the National Model Energy Code (City of Tucson 1998). According to ICLEI (2000), the programme has resulted in an annual reduction of 714 metric tonnes of greenhouse gas emissions while saving $73,000 in utility costs.

In the transportation sector, local governments can encourage a reduction in the use of cars by providing infrastructure for, and promoting the use of, alternative modes of transport, and by planning cities in order to reduce the need to travel. For example, a free electric bus shuttle in Chattanooga, US avoids 1,587 metric tonnes of carbon dioxide emissions annually, and, by facilitating access to downtown businesses, is expected to

generate $800,000 in revenue (EPA n.d.a.). Local governments also have significant opportunities to achieve reductions of greenhouse gas emissions through solid-waste management programmes, including methane recovery and recycling. The city of Edmonton, Canada, captures landfill gas and uses it as an energy source, avoiding more than 177,000 metric tonnes of greenhouse gas emissions in 1999 while simultaneously reducing some of the negative impacts of landfills such as stress on local vegetation and potential for explosions (Pembina Institute n.d.).

Despite the potential scope for action by local governments that such initiatives illustrate, in the main such measures address a comparatively small proportion of the total amount of greenhouse gas emissions produced in any one place, and tell us little about the extent of local action on climate change and the problems encountered. A growing number of studies have taken a more in-depth and comparative approach in analysing local initiatives to address climate change (Angel *et al.* 1998; Collier 1997a; Collier and Löfstedt 1997; DeAngelo and Harvey 1998; Feldman and Wilt 1993; Harvey 1993; Lambright *et al.* 1996). The *Global Change in Local Places* project (Agyeman *et al.* 1998), funded by th US National Aeronautics and Space Administration and the Association of American Geographers, examined how local places contribute to global change and the processes that drive local greenhouse gas emissions in three areas of the US, as well as the obstacles to the local adoption of climate change mitigation and adaptation policies. Like other researchers, their findings suggest that the ability of any given local authority to address climate change is conditioned by the broader political and economic context in which it operates (Angel *et al.* 1998; Wilbanks and Kates 1999). Collier and Löfstedt (1997) found that Swedish cities have greater scope for action than their British counterparts in large part because they have municipally owned utilities and greater financial independence. While the City of Toronto owns its electric utility, its ability to influence greenhouse gas emissions in the energy sector is limited by the fact that the provincial government has the authority to regulate utilities (DeAngelo and Harvey 1998).

These opportunities and constraints are not shaped within the bounds of local government, but are constructed through emerging forms of multilevel governance which, as we argued in Chapter 2, involve new transnational networks of subnational governments. For example, the German-based Climate Alliance focuses explicitly on climate change. Its members include more than 1,000 local authorities in Europe who work to reduce their greenhouse gas emissions and, through partnerships with indigenous peoples' organizations, to conserve rainforests (Climate Alliance 2001). Other networks are wider in scope but cover issues relevant to the governance of climate change. These include energie-cités, a European organization dedicated to promoting sustainable local energy policies among its 100 members, and Sustainable Cities, a joint initiative of the UN Centre for Human Settlements and UNEP that helps local authorities link environment and development objectives in their planning and management activities (energie-cités 2001; Sustainable Cities 2001). The extent to which such networks facilitate local initiatives to control greenhouse gas emissions and shape climate change politics at other levels is uncertain. By focusing on the ICLEI CCP programme, in this book we seek to illuminate the role of such transnational networks in shaping urban sustainability and global environmental governance.

### *The CCP programme*

ICLEI, which was established in 1990, works 'to build and support a worldwide movement of local governments to achieve tangible improvements in global environmental

conditions through the cumulative impact of local actions' (ICLEI n.d.). Its members consist of more than 370 local governments and their associations from around the world. ICLEI's involvement in the issue of climate change dates back to 1991, when it sponsored the *Urban $CO_2$ Reduction Project*,[14] which was funded by the US EPA, the City of Toronto and several private foundations. This project, which ran until 1993, was designed to 'develop comprehensive local strategies to reduce greenhouse gas emissions and quantification methods to support such strategies' (ICLEI 1997). In the wake of the success of the *Urban $CO_2$ Reduction Project*, in 1993 ICLEI launched the CCP programme. As of May 2002, the CCP programme had 549 members worldwide, including 142 in Australia, 117 in the US and 18 in the UK (ICLEI 2002a; see Appendix 1).[15]

One of the objectives of the CCP programme has been the recruitment of local governments whose collective emissions of greenhouse gases represent 10 per cent of the global total. In this ambition, the CCP programme has had a degree of success; as of December 2001, CCP members accounted for 8 per cent of global emissions of greenhouse gases. While the achievements of any single local government may be relatively modest, the CCP programme is premised on the assumption that by working together local authorities can make a significant contribution to efforts to mitigate climate change. Initially, the CCP campaign was co-ordinated by staff at ICLEI's international headquarters in Toronto. However, the CCP programme is being decentralized as ICLEI establishes national and regional campaigns. By 2002, national campaigns had been established in Australia, Canada, Finland, India, Italy, Mexico, the Philippines, South Africa, the UK and the US. In addition, ICLEI has regional campaigns in Europe, Asia and Latin America.

Perhaps the most interesting feature of these national and regional campaigns is the close partnership that has developed with a number of national governments. For example, the US, Canadian and Australian CCP programmes all receive significant financial support from national environmental agencies. The US Agency for International Development financed pilot projects to establish the national campaigns in India, Mexico, the Philippines and South Africa, and the European CCP campaign is funded in part by the European Commission. The advantage of moving to nationally and regionally based campaigns is that it simultaneously allows member communities to be part of a global network and take advantage of the technical expertise that ICLEI has to offer, while also allowing the campaign to be adapted to the specific circumstances of individual countries. It also provides a means of promoting the importance of local action within national governments. Of the case-studies documented in Part 2 of this book, those from the UK joined the CCP programme before the pilot national campaign, *Councils for Climate Protection*, was launched in 2000, and only Leicester City Council is still active in the new programme. Denver has also been a long-time member of the programme, as one of the original participants in the *Urban $CO_2$ Reduction Project*, and continues to be active in the US national CCP programme, while Milwaukee has been less actively involved. Newcastle City Council in Australia was a leading advocate of local action on climate change before the Australian CCP programme was launched, and has been a key member since that time.

A second goal of the CCP programme is to enhance local capacity to mitigate climate change. To become a member of the CCP campaign, local governments must pass a resolution or other formal declaration of their intention to address the threat of global climate change. Members then commit to passing through a series of five 'milestones' (see Box 3.3). As of October 2001, 52 of the municipalities participating in the Australian CCP programme had completed the local action plan (milestone 3), 27 were implementing

**Box 3.3: The CCP milestones (ICLEI 2002b)**

1 Conduct an energy and emissions inventory and forecast
2 Establish an emissions target
3 Develop a local action plan to achieve that target
4 Implement policies and measures
5 Monitor and verify results

policies and measures (milestone 4) and six had monitoring processes in place (milestone 5) (CCP-Australia 2001). The CCP-US campaign reported that 44 of its 75 members had completed the emissions analysis (milestone 1) by 2000 and 23 local authorities had developed local action plans (milestone 3) (ICLEI 2000). A recent survey by the UK *Councils for Climate Protection* programme found that 16 per cent of member councils had developed a climate change strategy (milestone 3), with most focusing on emissions from internal operations rather than the wider community (CCPP 2001). ICLEI provides CCP members with technical assistance and training to complete these milestones and build local capacity. In conjunction with Torrie Smith Associates, Inc., a Canadian environmental consulting firm, the CCP programme has developed a software package to help local authorities calculate, forecast and monitor their greenhouse gas emissions. This software translates data related to energy use across different sectors and other activities into emissions of greenhouse gases, and can be used for evaluating the effectiveness and economic benefits of various options for their reduction. The CCP programme organizes workshops to help local governments learn how to use the software, and in many cases provides access to funding, derived from national governments, for conducting the initial emissions analysis.

One of the central means by which transnational networks are assumed to affect governance is through the exchange of ideas and information, and the creation of normative goals for compliance (Lipschutz 1996; Low *et al.* 2000b). In addition to the emphasis placed on the creation and exchange of technical information, the CCP campaign promotes networking and provides information on best practices, through workshops and the publication of case-studies. For example, in 2001, the Italian CCP programme held a workshop on the use of solar technologies in urban areas and the international office sponsored a workshop in Heidelberg, Germany, aimed at fostering partnerships between municipalities in industrialized and developing countries. Officials from the city of Fort Collins, US, have made several trips to Cebu City, the Philippines to share experiences in addressing solid waste management issues (ICLEI 2001). However, the extent to which such initiatives promote policy change demands further attention, and we consider this issue in the chapters which follow. Furthermore, the emphasis on capacity building through the provision of technical information and sharing best practice is firmly rooted in the premises of 'new localism' (Marvin and Guy 1997), discussed in Chapter 2. In this model of urban sustainability, desired end goals can be met through monitoring resource flows and the implementation, by local governments, of technical fixes or behavioural changes to reduce resource consumption. In this approach, local capacity is a function of knowledge about local emissions and measures which could be implemented to address them, rather than being structured by social, economic and political processes taking place

at multiple scales. Processes of policy-making and implementation are conceived as rational and linear, rather than negotiated and contested. Furthermore, capacity to act is seen to reside within local authorities, an approach which neglects the changing, multi-level, nature of (local) governance. We return to the implications of this approach for the CCP programme, and the nature of network governance, in our conclusions (see Chapter 12).

The third goal of the CCP programme is to enhance local accountability for greenhouse gas emissions reductions. As is evident from the use of the software tool, the CCP methodology emphasizes the quantification of efforts to reduce greenhouse gas emissions as a means of identifying the scope for, and accounting for the results of, measures implemented by local authorities. In line with the assumptions of the new localist approach to urban sustainability, the process of quantifying emissions savings is also seen as an important component of creating an on-going governance structure for local climate protection. By monitoring and reporting on the effects of their activities, it is argued that CCP members can see the results of their efforts to mitigate greenhouse gas emissions. On the basis of these processes of data collection, CCP-US (ICLEI 2000) estimates that local authorities have reduced their annual greenhouse gas emissions by 7.5 million metric tonnes (an average of 100,000 tonnes per city). ICLEI-US officials suggest that this is a conservative estimate since many of the cities do not quantify all of their activities which create greenhouse gas emissions reductions (ICLEI 2000; Young, A. 2000). In 2000/2001 Australian councils reduced their emissions of greenhouse gases by 78,182 metric tonnes, more than doubling their achievements in the previous year (CCP-Australia 2001). Such results, it is suggested, not only help keep cities engaged in climate protection but can also serve as a valuable tool for recruiting new members and generating political support for local climate protection. Moreover it is argued that through this approach, local authorities gain a new perspective on the linkage between 'global' issues such as climate change and 'local' issues such as air quality, energy conservation and land-use planning. To this end, as well as emphasizing the climate-related benefits of controlling local greenhouse gas emissions, the CCP programme highlights the co-benefits of taking action, including the potential for considerable economic savings. For example, in 1999, US CCP members reported savings of $70 million in energy and fuel costs (ICLEI 2000). As Seattle Mayor Paul Schell argues 'climate protection goes hand in hand with prosperity':

> Over the past two years, when energy markets went haywire, Seattleites saved $114 million in power costs due to City Light-sponsored energy efficiency upgrades over the past two decades. Using more efficient lights, appliances, motors and construction practices, we get better energy service, more comfortable buildings, higher productivity and more competitive businesses while saving a bundle on our energy bills.
>
> Schell 2001: B6

Improving energy efficiency, ICLEI argues, can also contribute to job creation through the use of local contractors and can facilitate local economic development. An OECD report on urban energy practices notes that local policies which 'incorporate environmental objectives can improve the competitive position of cities in their challenge to attract investments, business and high-skilled workers' (OECD 1995: 21). The CCP programme also suggests that addressing climate change can provide additional environmental benefits, including improved air quality. Many local activities that produce

greenhouse gas emissions produce other pollutants that have more direct effects on local air quality, including tropospheric ozone, nitrous oxides and sulphur oxides. Thus, efforts to reduce greenhouse gas emissions also lower emissions of these substances, thereby improving local air quality (STAAPA-ALAAPCO 1999). Finally, it is argued that addressing climate change contributes to improved 'liveability' in local communities. Citizens enjoy a higher overall quality of life due to improved air quality (better health), and more efficient homes and offices (thus more discretionary income). In addition, they note a strengthened sense of community as development and transportation patterns begin to place people in closer proximity with their work, schools and services (ICLEI 1998). The CCP approach is premised on the basis of the win–win potential of climate protection measures, and there is little sense that these might be contested or resisted. However, whether different elements of local and global sustainable development agendas can be as mutually reinforcing as this rhetoric suggests, or whether climate protection can be reconciled with other local priorities, is moot, and we explore these issues further in Part II.

The fourth objective of the CCP programme is to represent local authorities within national, regional and international political arenas. ICLEI regularly sends delegations to international climate change negotiations and often makes official statements before the plenary sessions emphasizing the role of local governments in mitigating climate change. The goal of these activities is both to showcase the achievements of local governments and to lobby for support from national governments for local climate protection. To this end it is argued, first, that local governments will be critical to the implementation of any international agreement or national objectives on climate protection, and second, that local governments can serve as laboratories for mitigating greenhouse gas emissions, offering lessons for national governments in terms of where they might direct resources. While the CCP programme appears to have made little impact within the international climate change regime to date, the proliferation of national and regional campaigns, and increased funding for local initiatives from national governments and other international organisations, suggests that the programme is making at least some impact at this level.

## The case-studies

From this discussion, it is clear that, in theory, there is considerable potential for local action to address climate change. Focusing on the CCP programme, this book seeks to identify the problems and prospects for local efforts to mitigate climate change and to assess the role of a transnational network of local governments in strengthening global governance on the issue of climate change. In Part II, we examine the experience of six cities that have participated in this network. We assess the influence of the CCP programme and examine how climate protection policy has developed within the context of local governance in the UK, the US and Australia (Chapter 4). These case-studies were developed during 1998–2002 through three different research projects.[16] In the UK, initial research involved a survey of the eleven local authorities involved with the programme between 1993 and 2000, from which three – Newcastle City Council, Cambridgeshire County Council and Leicester City Council – were selected for further in-depth analysis of the nature and extent of local climate protection policy. The US cases were developed for a research project to assess how global issues, such as climate change, come to be reframed as local issues. Research concerning the development of local climate protection policy in Newcastle (NSW) and the CCP-Australia programme formed part of

a wider study of the politics of climate change in Australia. Each project involved the assessment of the impact of the CCP programme and local climate change policy within each local authority, and was conducted through the analysis of policy documents and semi-structured interviews with members of ICLEI, local government officials and politicians, as well as with other stakeholders. On the basis of this research, the chapters which follow consider whether, and how, a transnational network affects local governance of climate change. The CCP programme is premised on the assumption that by linking cities together, local capacity can be increased, leaders can learn from one another and collectively develop a set of best practices through which greenhouse gas emissions can be reduced and the co-benefits realized. Participation in such a network should reduce the transaction costs of mitigating climate change and enhance the ability of local governments to develop new policies and programmes for reducing their greenhouse gas emissions. These case studies ask whether such learning has occurred, and identify the obstacles that may make it difficult for local authorities to take on the issue of climate change in specific local policy sectors.

More broadly, we ask whether this transnational network of local governments represents a new form of environmental governance. The CCP programme, which simultaneously takes place at global and local scales, seems to bypass the nation-state and is therefore overlooked in traditional notions of environmental governance. If the CCP programme does indeed reflect a new form of environmental governance, how does it interact across scales and borders? Does it provide a means of overcoming some of the obstacles faced to reducing greenhouse gas emissions at the global, national and local levels? What are the implications for our understanding of urban sustainability and global environmental governance? These broader questions are addressed in our case-studies as well as in the concluding chapters of this book.

# Part II

# Cities and climate protection

# 4 Local government and local governance

In Part II we examine the experiences of six cities in the UK, US and Australia, all members of the CCP programme, in attempting to govern climate change at the local level. We trace the history of their involvement in this transnational network and its impact on policy development and implementation. We also consider the problems and opportunities which local authorities have faced in putting climate protection policy into practice. In order to understand the nature of multilevel governance, as well as the constraints and opportunities which local authorities face, it is important to examine the contexts within which local government operates in each of the three countries from which our case-studies are drawn. In this chapter, we explain the main features of local government in the UK, US and Australia in turn.

## The UK

In the UK, local authorities are directly elected bodies, assuming multifunctional roles, covering areas such as education, health, regeneration and planning. However, unlike in other parts of Europe, where they have the power to undertake any activities which they see as in the interest of their communities unless explicitly banned from doing so, in the UK local authorities are governed by the legal principle of *ultra vires*. In other words, 'local councils can do *only* what they are statutorily permitted to do. Their rights and competences are not general, but specific' (Wilson and Game 1998: 22, original emphasis). The statutory duties set by central government can be compulsory or discretionary, either dictating the activities which local authorities must undertake, or allowing for flexibility in the priority given to different measures and the ways in which they are implemented. Wilson and Game (1998: 24) argue that 'traditionally, much of the legislation affecting local government has had what might be termed a high "discretion factor". Local councils have had considerable say in how they deliver their services and, in some cases, whether or not they do so'. Rather than being wholly self-governing, or simply an administrative arm of central government, this mixture of specific competences and considerable local discretion has led some commentators to argue that local government in the UK enjoys 'partial autonomy' (Wilson and Game 1998). However, since the 1970s, local government has been subject to several significant reforms, to its organization, functions, finances and administration, which have raised questions as to the extent to which any such autonomy now exists. In part, these have been ideologically motivated, for example, the Thatcher administration which dominated UK politics in the 1980s believed that the state should be 'rolled back' and market forces introduced to public agencies.

Reforms have also been prompted by party political conflicts between central and local government. In addition, they reflect broader changes to governance in the UK, including the influence of the EU and the increasing importance of the private and voluntary sectors, as well as a desire to modernize local government in order to make it more accountable, both to central government and to local communities.

The present structure of local government in the UK is the result of successive rounds of reorganization of the boundaries of local authorities. By the end of nineteenth century, a tiered system of local authorities had been established in London and rural areas, including county, district/borough and parish councils, while in large towns single local authorities were established. Reforms during the early 1970s introduced a two-tier system within large urban areas, and rationalized the number of county and district/borough authorities elsewhere in the UK. This was not the end of the story, however, and during the 1980s and 1990s the two-tier system within metropolitan areas was removed, and unitary authorities reestablished and extended to other large towns (Leach and Percy-Smith 2001; Wilson and Game 1998). The two-tier system persists in the rest of the UK. Of the case-studies considered in this book, Newcastle City Council (Chapter 5) and Leicester City Council (Chapter 7) are unitary authorities, while Cambridgeshire County Council (Chapter 6) is part of the two-tier system (Figure 4.1). The picture of subnational


*Figure 4.1* Map of the UK showing the location of the case-studies

governance in the UK has been further complicated by recent processes of devolution and regionalization. Following the election in 1997 of the current Labour administration, democratically accountable institutions were established in Scotland and Wales with responsibility for some decisions concerning policy and resources which were previously taken at the national level. During the early 1990s, government offices for regions in England were established to co-ordinate government policy. Under the Labour administration further regional structures of governance, including regional assemblies, which act as a forum for local authorities, and regional development agencies, charged with developing strategies for regional economic development and regeneration, have been established. While these institutions are supposed to represent a shift away from central control over decision-making and the distribution of resources, concerns have been raised that they may serve to undermine existing forms of local governance.

During these processes of structural reorganization, the functions assigned to local authorities have also undergone considerable change. Up until the 1970s, it was possible to describe local authorities as the primary agents of local governance, as direct providers of services. The current situation is more complex, as successive reforms, primarily carried out under the Conservative governments of Thatcher and Major, have reduced the role of local authorities as service providers through, for example, the deregulation of bus services, giving schools the choice of opting out of local authority control, and giving council tenants the right to buy their council houses. In essence, 'other public agencies, the private sector and the voluntary sector were extensively involved in the provision of services which had previously been supplied largely or exclusively by the local council' (Leach and Percy-Smith 2001: 67). Given that many of the new agencies which have become involved in local governance are un-elected bodies, concerns have been raised that this poses a threat to local democracy. On the other hand, such reforms have led to the more direct involvement of (some) local communities, grassroots organizations and businesses in the process of local governance, at a time when electoral turnouts for local government elections are falling.

Significant reforms to local government finances have also taken place. During the 1980s, funding from central government to local authorities was restricted and a system of capping introduced to limit the amount of revenue that local authorities could raise through processes of local taxation, and subsequent reforms to the local taxation system have not proceeded smoothly. Nevertheless, local authorities remain 'big business'. Wilson and Game (1998: 84) argue that if 'individual local authorities were listed in terms of their expenditure, almost 100 would rank alongside the top 500 British companies'. In part, this reflects the growth in funding available from the EU direct to local authorities, through bids for specific initiatives or projects. Furthermore, local authorities still retain a high level of discretion over financial management, with estimated levels of mandatory spending at between a third and a half of all expenditure (Wilson and Game 1998: 90). One of the most significant changes to local government financial management was the introduction of 'compulsory competitive tendering'. Under this system, local authorities were obliged to put their services out to tender, and to accept the most economically competitive bid. The Labour administration has revised this approach. Rather than look for the most cost-effective bid, local authorities are required to ensure that the services that they undertake, and the means by which they do so, provide 'Best Value'. These reforms show a changing culture within local authorities, away from a focus on the quantity of services provided, to a more customer-oriented philosophy in which the quality of services is equally, if not more, important.

The changing nature of local government functions and finances is reflected in changes to their administration. Leach and Percy-Smith (2001: 155) argue that over the past three decades a shift towards public sector management has taken place within local authorities, so that rather than simply overseeing the delivery of certain services, local governments are now engaged in devising solutions to problems. During the 1980s and 1990s, the introduction of market mechanisms to local authority administration took place through compulsory competitive tendering, as described above, but also through the devolution of financial control to lower levels of management, for example, allowing schools to manage their own budgets. This shift brought with it a concern for measuring the performance and quality of local service delivery (Leach and Percy-Smith 2001: 172). In order to ensure that local authorities can be compared with each other, and to make them accountable for the services delivered in their local area, during the 1990s a range of performance indicators were introduced. Under Best Value the emphasis on comparability and accountability through performance indicators, and the auditing of public agencies, has been more systematically developed. The Beacon Council scheme, also introduced under the Labour administration, reflects current concerns for evaluation of the performance of local authorities. Under this scheme, leading local authorities are rewarded for their initiatives and encouraged to share their experiences with other local authorities. As well as making changes to the administrative level of local government, the Labour administration has also introduced reform to their political management. Throughout the 1990s, the need to move away from the committee system of local government decision-making, where each department made decisions in separate committees which were then ratified (or not) by the council, was debated. The 1999 *Local Government (Organization and Standards) Act* required that all local authorities shift to new forms of political management, with a 'separation of the executive from the representative and scrutiny functions of members' (Leach and Percy-Smith 2001: 182). The rationale for these changes was to ensure that local government was more accountable and transparent, as well as more efficient. In practice, most local authorities have adopted the 'cabinet and leader' system, so that while department-specific committees prepare policy papers and motions, decisions are taken by a select group of councillors appointed to the cabinet.

There is little doubt that the 1980s and 1990s have seen significant intervention in the form, function, finances and administration of local authorities on the part of central government. While some commentators have argued that this has weakened local government irrevocably, others suggest that local authorities remain powerful actors, and, moreover, that local governance, as conducted through a range of public, private and voluntary organizations, has been strengthened (Leach and Percy-Smith 2001; Wilson and Game 1998). The New Labour agenda of 'modernizing' local government may also provide local authorities with increased discretion. In 1997, Blair signed the 1985 European charter for local self-government, which 'commits signatory member states to guarantee "the right and ability of local authorities to regulate and mandate a substantial share of public affairs under their own responsibilities"' (Wilson and Game 1998: 89). While no power of general competence has been introduced, the *Local Government Act 2000* includes a new duty on local authorities and the requirement to engage the public in local governance:

> The Local Government Act gives councils new powers to promote or improve the economic, social or environmental well-being of their area. Councils will now also be

> required to prepare comprehensive community strategies with local strategic partnerships and to fully involve local people in this process.
>
> Department of the Environment, Transport and the Regions (DETR) 2001a

This new duty and the process of community planning has the potential to put into practice the rhetoric of LA21, that local communities should be engaged by local authorities in determining economic, social and environmental sustainability (see Chapter 2). However, as the following chapters documenting the experiences of Newcastle City Council, Cambridgeshire County Council and Leicester City Council suggest, defining and implementing local sustainability is far from straightforward, and it remains to be seen whether either the new duty, or the process of community planning, will be used to this end.

The changes which have taken place within local governance in the UK over the past three decades defy any simple explanation based on power relations between central and local government. Local governance has become more complex, with a wider range of public, private and voluntary organizations involved, in a context where hierarchical relations of governance between discrete national and local levels are difficult to discern. Within the UK, the influence of the EU, devolution of government in Scotland and Wales, and the establishment of regional development agencies and regional assemblies, means that any analysis of local governance needs to look more broadly at the different vertical and horizontal networks within which local authorities are engaged. In this changing context, local authorities remain significant actors, with at least some degree of discretion over policy-making and resource expenditure, and influence over a wide range of processes which have implications for the success (or otherwise) of climate protection. The three UK case-studies in this book explore these roles in depth.

## The US

The federal system in the US consists of two levels of government: the national and the state. 'Each level of government derives its authority from a source legally superior to both – the US Constitution. Although the states and the national government perform a number of overlapping functions, the states and the national government exist and operate in parallel fashion' (Straayer *et al.* 1998: 342). Local governments are legally inferior to states: they provide a means for state and national laws to be adapted to local circumstances, but states generally prescribe the authority and responsibilities of local governments in great detail. While there are numerous types of local governments in the US, here we focus primarily on counties and cities, as these are discussed in the case-studies of climate protection in Denver and Milwaukee (Figure 4.2).

Counties are the largest political division below the state; there are more than 3000 counties in the US. Counties are created by states to administer state functions at the local level. In other words, they are an administrative arm of the state (Bowman and Kearney 2002; Grant and Omdahl 1993; Straayer *et al.* 1998). Most counties are governed by a board of commissioners (which varies in size depending on the size/population of the county) and a few directly-elected officers, such as a sheriff, coroner, clerk and superintendent of schools. Milwaukee County is one of the few counties in the US that has a chief executive. County governments are responsible for record-keeping (e.g. births, deaths, voter registration, property ownership, etc.), administering elections and providing a range of services, often including road construction and maintenance, tax collection and administration of parks, jails and libraries (Straayer *et al.* 1998).

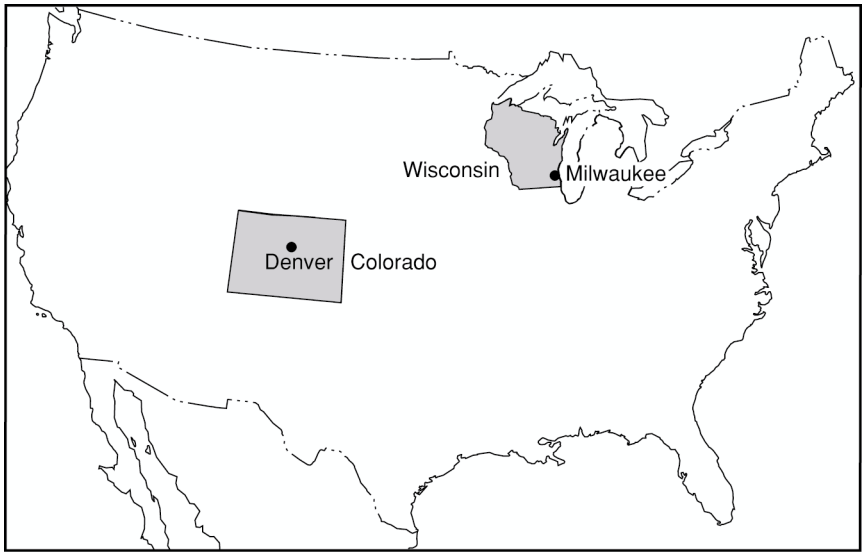


*Figure 4.2* Map of the US showing the location of the case-studies

A county may consist of multiple cities, although in some cases, such as Denver, city and county governments have been consolidated. Whereas counties are created by states, cities come into existence when 'residents of an area want services that can be obtained only through the existence of a city government' (Grant and Omdahl 1993: 300). State constitutions prescribe the means by which an area may be incorporated. In both Milwaukee and Denver this took place through the adoption of a city charter – Milwaukee's charter was adopted in 1846, Denver's in 1861. Once formed, the state dictates how city governments are to be structured and imposes a range of responsibilities, such as enforcement of the state's criminal code and complying with health standards and other general mandates (Grant and Omdahl 1993; Straayer *et al.* 1998). The distinction between cities and counties in terms of their relationship to the state is illustrated in the following description of Denver's city government:

> In operation, Denver is primarily a city. But certain officers are also county officials. When Denver performs county functions such as services provided by the County Clerk and by Social Services, those functions are more under the control of the State.
> CCD 2002

In general, there are three forms of city government in the US: mayor–council, commission, and council–manager (Bowman and Kearney 2002; Grant and Omdahl 1993; Straayer *et al.* 1998). The mayor–council form of government consists of a popularly elected mayor and a unicameral city council made up of individuals who are either elected at-large or as representatives of districts within the city. In a 'weak-mayor' system, responsibility for budgetary and personnel decisions falls primarily with the council. In a 'strong-mayor' system, the mayor has authority over these matters. As with most large cities, both Denver and Milwaukee have strong mayor–council systems. In a commission system, voters elect a city commission. Each commissioner serves as the administrative

head of a city department and collectively they are responsible for making policy decisions. In the council–manager system, a city council is elected in at-large elections. The council then hires a city manager, who handles the day-to-day administration of the city government. In most cases, the council chooses one of its own to serve as mayor but without the powers afforded the office under the mayor–council form of government.

Although not a formal political designation, metropolitan areas are an important context in which city and county governments exist in the US. There are currently 261 metropolitan areas in the US (OMB 1999). Metropolitan areas are a reflection of the 'suburbanization' of America; over the past 50 years, Americans have been moving out of city centres to the fringes. One challenge for local government has been the subsequent fragmentation of authority. As noted by Grant and Omdahl, '[metropolitan areas] are primarily areas of common interest but with uncommon governments, thus providing a dilemma in the normal delivery of governmental services and in the formulation of area-wide policy' (1993: 301). While problems, such as traffic congestion and air and water quality affect everyone living in the region, no single government has the authority or resources to address these problems. On the issue of resources, there is often inequity among the jurisdictions that make up a metropolitan area. In particular, core cities (such as Denver and Milwaukee) find themselves in financial trouble as people move to the suburbs, depriving the city government of its tax base (Straayer *et al.* 1998). Suburbanites, who do not pay city taxes, 'continue to burden the city's traffic and parking problems, use the city's streets and parks, and frequently receive many other city services without charge. This places an inequitable burden on one group of metropolitan taxpayers' (Grant and Omdahl 1993: 385).

There are a variety of ways in which US cities attempt to govern themselves within metropolitan regions. In some cases, cities have formed metropolitan governments. Portland, Oregon has the nation's only directly elected regional government, referred to as 'Metro' (Lewis 1996). Portland's regional government has considerable authority over a wide range of activities. In contrast, Denver's regional government organization, the Denver Regional Council of Governments, is limited to an advisory role. Another common approach to co-ordination across metropolitan areas is the formation of special districts, created to perform a single function, such as creating and maintaining parks and sewers (Straayer *et al.* 1998). There is significant variation in how these districts are governed (some may be ruled by popularly elected boards) as well as in the amount of authority they have, which is dictated by the state.

The relationship between states and their local governments is often strained, largely over issues of finance and autonomy. States have the authority to dictate how local governments can raise revenue; in cities, the most common source of revenue is property taxes. States are the largest single source of local revenue, passing on more than $200 billion annually to their local governments (Bowman and Kearney 2002). However, resources from the state often come with conditions, which limits local autonomy (Bowman and Kearney 2002). Denver, for example, relies on the state for highway funds. The State Department of Transportation places a high priority on road construction and does not allow the city government to use state funds for public transport projects (see Chapter 8). In addition, states impose a variety of mandates on local governments, including dictating what services must be provided, restricting activities, such as land-use regulation, that may affect other jurisdictions, allowing tax exemptions for new businesses and dictating personnel practices (e.g. requirements for collective bargaining or retirement benefits) (Grant and Omdahl 1993). Not only do state mandates limit local government autonomy,

they may also carry financial burdens that are not necessarily provided for by the state. As we illustrate in Chapters 8 and 9, the relationship between state and local governments can have significant implications for attempts to govern climate change locally.

## Australia

Despite their role in providing local services and representation for local communities throughout the second half of the nineteenth century, the Australian Constitution of 1901, which formed the Commonwealth of Australia, makes no mention of local government. As a consequence, for the best part of the twentieth century local authorities have been seen as a creature of state governments, created and controlled by Local Government Acts within each state (Chapman and Wood 1984; Keen *et al.* 1994). Through these acts, state governments control the form, function and boundaries of local authorities. However, the ability of local governments to collect certain taxes and fines, create by-laws, choose the level of various services to provide, and their directly elected status make them more than merely an administrative arm of state government (Painter 1993). Nevertheless, local government has traditionally been seen as 'strongly conservative and developmentalist in orientation' (Keen *et al.* 1994: 46) and concerned with a limited number of functions, known proverbially as 'roads, rates and rubbish'. Since the 1970s, this picture of local authorities as constrained by a lack of resources and with limited areas of responsibility has changed, as the relations between federal, state and local governments have been renegotiated. Three related trends within local government can be identified: first, the increasing direct involvement of federal government; second, structural reforms which have introduced the principles of economic rationalism; and third, a growing emphasis on the democratic and self-governing nature of local authorities, each of which we now discuss in turn.

Although local government has long been able to raise revenue through systems of property taxes or rates, the amounts generated are small, estimated as approximately 4 per cent of all taxes collected (Painter 1993), leaving local authorities financially dependent on state governments. However, during the early 1970s, the federal government began providing direct funding to local authorities, both in the form of general grants, administered through the states, and through project-specific funding (Marshall *et al.* 1999). Worthington and Dollery (2000) suggest that by the mid-1990s, approximately 70 per cent of all grants received by local government were coming from the federal government. In addition to intervening in financial provision, during the 1980s and early 1990s the federal government promoted the status of local government. An Office for Local Government was established to fund specific programmes and projects. In 1988, the federal government supported Australian Local Government Association (ALGA)'s bid for formal recognition of local government in the Constitution. However, this move was opposed by state governments and failed to win public support in a referendum. In 1992, ALGA was invited to become a member of the Council of Australian Governments, a key intergovernmental decision-making organization. Relations between the federal government and local governments were further cemented with the signing of an Accord between the Commonwealth and ALGA, which 'committed both parties to building a "closer and more productive relationship"' (Marshall *et al.* 1999: 38). The Accord acknowledged that local government 'constituted the third level of government and carried out a critical representative role in its own right' (Marshall *et al.* 1999: 38). By the mid-1990s, local government was seen to have a critical role to play in the imple-

mentation of federal initiatives and to be an important, representative, institution in its own right.

Although the federal government did much to shape the development of local government in the 1980s and early 1990s, it was the structural changes brought in by state governments which had the most far reaching impacts. Between 1993 and 1996, each state government independently introduced new Local Government Acts, with the central purpose of improving the efficiency and effectiveness of service delivery. Marshall *et al.* argue that these reforms were threefold. First, they involved the introduction of management principles to local government, so that all 'councils must now adopt corporate management frameworks and strategic planning practices, develop a client-focused organizations culture, and specify performance measures' (1999: 40). Second, competition has been introduced to the local government sector. As part of the introduction of the *National Competition Policy*, all local governments are required to ensure that their profit-making activities meet the standards of 'competitive neutrality', that is, that they are 'subject to the same statutory constraints and market forces as business enterprises' (Marshall *et al.* 1999: 41). In most states, the effect of competition has been limited to 'significant' business activities. However, in Victoria compulsory competitive tendering, along similar lines to the UK model discussed above, was introduced ahead of the *National Competition Policy*. This required all local authorities to have 50 per cent of their work put out to tender by 1997, though the councils could chose which elements were subject to competition and which were not (Mercer and Jotkowitz 2000: 177).

The third element of structural reform has been the amalgamation of local councils, so that by 1997 there were 729 councils in Australia, a fall of 25 per cent since 1991 (Marshall *et al.* 1999: 41). This process has not been conducted evenly. In New South Wales (NSW), where amalgamations took place in the 1970s, the emphasis has been on increased inter-council co-operation rather than formal amalgamation. In Victoria, in contrast, the number of councils was almost halved, and the process conducted in a top-down manner which saw the state government dismiss elected councils and appoint commissioners to oversee the transition process (Marshall *et al.* 1999). While reforms to local government in Victoria are widely seen to have reduced the powers of local government, in other states the outcomes have not been so clear cut. In NSW, in which our Australia case-study, Newcastle, is located (Figure 4.3), reforms have been relatively permissive, and included new responsibilities for addressing sustainable development (see Chapter 10).

Furthermore, despite the emphasis on economic efficiency and effective service delivery, Marshall *et al.* (1999) argue that the reforms introduced by state governments also included elements which enhanced the self-governing status of local authorities and their democratic rationale. Up until the 1990s, local government in Australia was constrained by specific competences, that is, local authorities were only allowed to take actions mandated by state and federal governments. However, the reforms to the Local Government Acts included the introduction of general competence powers for local authorities, through which they are permitted to take whatever action they see as necessary to improve their local communities. In addition, the reforms clarified the roles of elected councillors and appointed officers, reaffirming the representative duties of councillors, and stressed the need for greater openness and public involvement in decision-making (Cetinic-Dorol 2000; Marshall *et al.* 1999). Together with the increasing recognition given by the federal government, these measures suggest that by the mid-1990s, local authorities were living up to their potential as a branch of government in their own right. However, the principles of economic rationalism introduced in the local


*Figure 4.3* Map of Australia showing the location of the case-study

government reforms of the 1990s, with their focus on economic effectiveness and performance indicators, could be seen to constrain any new-found freedoms local government may have won (Marshall *et al.* 1999; Mercer and Jotkowitz 2000). Furthermore, the late 1990s, under the administration of the Coalition government, has seen a reduction in federal government funding for local authorities, and increasing constraints on those funds which are available. Marshall *et al.* (1999: 52) suggest that there 'are some indications too that, as federal grants decline, state support for democratic values in local government may be faltering in favour of more utilitarian requirements'. While, by the 1990s, local government in Australia has established itself as a self-governing entity, its role remains dependent on the resources provided, and the requirements made, by state and federal governments.

## Conclusion

Across the case-studies, there are differences and similarities in the formal roles and responsibilities of local government, and in their environmental, social, political and economic contexts, which have influenced how local action on climate change has been conceived and implemented. Analysis of the content of local (environmental) policy can give us one picture of the ways in which climate change is being addressed at the local level. However, we feel that it is important to consider the extent to which such policies have had an impact on the ground. As we illustrated in Chapter 3, local government can influence emissions of greenhouse gases through a variety of measures, though these vary with national and local circumstances. In this book, we focus on how climate protection policies have been put into practice in the sectors of land-use planning (Chapters 5, 9 and 10), transport planning (Chapters 6, 8 and 10) and energy use in the built environment (Chapters 7, 8 and 10). In each chapter, we consider the national and, in the case of federal systems, state context of policy-making in the relevant sector,

and examine the factors which have enabled or constrained action at the local level to reduce emissions of greenhouse gases. In Part III, we present a comparison of the experience of the different case-studies in addressing climate change, and an assessment of the implications of our findings for our understanding of urban sustainability and global environmental governance.

# 5 Newcastle upon Tyne
## Planning and climate protection

In this chapter, we examine how the imperative of climate protection has been interpreted and implemented in Newcastle upon Tyne. Newcastle is a large conurbation in the north-east of England. Traditionally, the city has been reliant on industries associated with the docks and river, such as ship-building and chemicals, as well as the nearby coalfields. As these industries declined during the 1970s and 1980s, the city and surrounding areas experienced considerable levels of economic and social deprivation. In the 1990s, substantial inward investment and regeneration within the city led to increasing prosperity and employment. In the first section, we document the history of Newcastle's involvement with energy management, and their membership of the CCP programme. While considerable attention has been devoted to the issue, action has been mainly confined to corporate energy efficiency measures, and the CCP programme has had little direct influence on policies or practices. We then examine how climate protection policies and measures have been developed within one particular sector: land-use planning. Over the past decade, land-use planning has been seen as a key instrument through which to implement sustainable development in the UK. We outline the background and rationale to these debates, focusing on moves to address urban energy consumption, and analyse how they have taken shape within the planning process in Newcastle. We argue that although the need for cities to reduce emissions of greenhouse gases has been articulated as a critical component of urban sustainability, competing interpretations of sustainable development, which privilege economic growth over environmental protection, have restricted the scope for local action on climate protection. In conclusion, we reflect on the impacts of the CCP programme in Newcastle, and the implications of our findings for urban sustainability and the governance of climate change.

### Energy, the urban environment and climate protection

Over the past thirty years, Newcastle City Council has promoted energy efficiency and the production of cleaner energy. In 1968, the Council was one of the first in the UK to invest in energy conservation, and since this time various experiments with energy efficiency, waste to energy, CHP and district heating schemes have been launched in order to tackle social problems caused by poor housing conditions and to reduce energy costs for the Council (NCC 1996: 15). For example, during the 1980s the Council implemented a programme of energy efficiency within its own estate, including a substantial amount of public housing, in which some of the money saved on energy bills from improved efficiency was invested in further energy efficiency measures. From investments of £2.5 million, during the period 1980–1990, over £10 million was saved. At this stage, the rationale for investing in energy efficiency was financial:

R: I think the drivers [for energy efficiency] in the early stage were financial … there was a lot of money saved, and a lot of money was able to be reinvested and the savings got bigger, and bigger, and bigger as this rolling programme went on … and everybody was happy. … And I think at that time our job was quite easy, because … the authority had control, you decided what you'd do, and you just did it and achieved savings, and it was great. Then I think following that, the drivers have been both to maintain the savings that we've achieved, and in the last few years it's been environmental. I think that we've been quite lucky in that a lot of the council members have been supportive of energy management initiatives, I think once you get started … it's the success stories that become the driver.

Interview, Energy Management Officer, NCC, 2000

In the late 1980s and early 1990s, alongside a continuing emphasis on financial savings, concern for the environmental impacts of energy use began to surface. In 1989, the City Council were successful in their bid for European funding under the CITIES programme to conduct research into the use of energy within the city.[2] The motivation for this study, *Energy and the Urban Environment* (NCC 1992), included the recognition that cities contributed to, and should aim to manage, emissions of carbon dioxide. Involvement with this programme, and the Council's reputation for addressing urban energy issues, won Newcastle recognition within Europe. In 1991, the OECD Group on Urban Affairs launched a programme on *Environmental Improvements through Urban Energy Management*, and the report associated with this project recognizes Newcastle as a leader in the field of CHP (OECD 1994). In 1994, as part of the conclusion to this initiative, the OECD and ICLEI organized a conference in Heidelberg on 'How to combat global warming at the local level', to which Newcastle City Council was invited. One of the key outcomes of the Heidelberg meeting was a 'mayors' declaration', which the leaders of local authorities were encouraged to sign to show their commitment to reducing emissions of greenhouse gases by at least 20 per cent of 1987 levels by the year 2005, and a series of action steps which were to form the basis of the CCP milestones (ICLEI 1994, 1996). Through this conference, and their membership of the Friends of the Earth Climate Resolution,[3] Newcastle became aware of the CCP programme. That the Council chose to join the programme was a result of individuals, both officers and members, who were interested in the environmental impacts of energy use and who saw the programme as a means of establishing international contacts and building good public relations. The Council also joined the energie-cités network (see Chapter 3) at this time, showing that the interest in international experience and expertise was not confined to the CCP programme.

As outlined in Chapter 3, the first three milestones of the CCP programme involve conducting an emissions inventory and forecast, selecting a reduction target and creating an action plan. In Newcastle, these tasks were undertaken before the Council joined the CCP programme, through the *Energy and the Urban Environment* study. On the basis of data gathered from within the local authority and from utilities, a model of energy use and related carbon dioxide emissions within the city was constructed. This model was then used to develop two alternative scenarios: the 'business-as-usual' case; and the 'new policy initiatives' case where policy intervention was used to redirect the creation and use of energy in four areas – CHP; energy efficiency; transport; and renewables (NCC 1992). From these scenarios, a target of reducing emissions of carbon dioxide by 45 per cent of

1990 levels by 2010 was selected, and an action plan containing various measures to reach this goal created and endorsed by the Council. Rather than increasing local capacity to address climate change, by, for example, providing the basis for gathering information and strategy development, Newcastle's membership of the CCP programme was a reflection of progress which had already been made towards these ends by the Council.

The compatibility between the CCP approach and the *Energy and the Urban Environment* study is due to a shared view of the 'energy problem' in the city, rooted in the 'new localist' framework (Marvin and Guy 1997) discussed in Chapter 2. With this approach, the assumption is that through the development of new technologies, the implementation of best practice projects, and the dissemination of information to individuals to create behavioural change, desired levels of energy use can be attained. This creates a 'highly audited view of the city in which information about energy flows, capacities and footprints is needed so that individuals and organisations can act appropriately' (Evans *et al.* 2001: 127). This vision was perpetuated in two further studies conducted by the Council, through which progress was monitored and additional strategies were proposed. The *Energy, Transport and the Urban Environment* study (NCC 1995), funded by grants from the European Commission and the UK government, looked specifically at the transport sector and suggested that 'non-essential' traffic should be removed from the city centre, though it did little to address the issue of reducing carbon dioxide emissions. The only review of the original strategy, *Energy and the Urban Environment – A Five Year Review* (NCC 1997), was made possible with funding from the UK's Energy Technology Support Unit (ETSU) and the Department of Trade and Industry. These initiatives show the complex nature of local policy development, involving state agencies at national, European and local levels. While it is evident that the CCP programme had little direct impact in shaping these strategies, or policy development in other parts of the local authority, in addition to other transnational networks including the CITIES programme and energie-cités, it provided a means through which Newcastle's experiences were disseminated, and gave the City Council access to European funding, such as the ALTENER and SAVE programmes.[4] In turn, these funds have been used to develop various energy supply and conservation projects:

*HB:* I was wondering how useful [these] pan-European networks are for you?

*R:* It helps, it helps in the bidding process, if you're going for any European money, I think the fact that the cities are networking in that way is good because it also spins off into other projects. … I think it's a two-way process, I mean I presented the results of our work at quite a few conferences, and whatnot in Europe, and we did that a lot with ICLEI.

Interview, Planning Officer (a), NCC, 2000

*R:* … We tend to be very good at getting European money in the city, we've got a couple of ALTENER bids, and there is one about to go in … for the SAVE programme, on renewable energy, so, our links with ICLEI have helped in exploring some options.

Interview, Environment Officer (a), NCC, 2000

Newcastle's involvement in transnational networks also gave council officers access to ideas and experience from across Europe. However, these were not translated directly from examples of best practice which could be transferred from Europe and implemented

in Newcastle. First, because officers found that the dissimilarities between the UK and other European countries, in terms of local authority powers and resources meant that examples of best practice from outside the UK-specific context were of little practical use in informing policy decisions. Second, because, based on their own experience, there was already a considerable body of knowledge within the local authority about issues of energy management. Thus, the process of information sharing functioned rather as a means through which individual officers could gain support and inspiration, in turn keeping the issue of energy on the agenda. The primary function of the CCP programme in Newcastle was symbolic, acting as a means through which individuals within the Council could raise the profile of their concerns internally, and make external commitments which the Council would feel obliged to honour, as well as highlighting existing policy initiatives within the city. Moreover, Newcastle's engagement with the CCP programme has been opportunistic. Routinized contact between the network and the local authority was not established, and connections were used only for particular projects or based on contacts between individuals. Although the programme was initially endorsed by the Council, it relied on the support of a few key individuals and failed to become institutionalized within the administrative structures of Newcastle City Council. As a result, its fortunes were vulnerable to changes in personnel and priorities, so that by the end of the 1990s it was seen as having little relevance:[5]

*R:* I think [CCP] was just another one of these things that you join. … And I think the cynic would say, well, it's another overseas conference thing that members could go to. It didn't mean anything. To be honest with you, it didn't mean anything in practice … to the extent that it didn't change any policies. It didn't change any practices. … It didn't change anything, you know.

Interview, Environment Officer (b), NCC, 2000

*HB:* … and what would you say the motivations for being involved with the programme are now …?

*R:* … there aren't any, is the honest answer. It doesn't have a political champion, that it used to have.

*HB:* … so, what would you say was the priority of the programme in the Council as a whole now?

*R:* … it's not.

Interview, Environment Officer (a), NCC, 2000

In effect, the programme had little influence on policy or practice within the City Council. Despite the explicit recognition of climate change as an issue of concern for local authorities, as articulated in the *Energy and the Urban Environment* study and various policy documents concerning energy management, transport and planning in the city (NCC 1992, 1995, 1997, 1998), few measures outside the Council's own estate have been undertaken to reduce emissions of greenhouse gases. The five-year review of the *Energy and the Urban Environment* study showed that little progress had been made towards the 'new policy initiatives' scenario, and its ambitious target of reducing carbon dioxide emissions by 45 per cent of 1990 levels by 2010 (NCC 1997). Instead, emissions levels were constant over the period, with any savings on projected increases the result of a national trend away from the use of coal to gas, rather than a result of the implementation of local strategies and measures. As Evans *et al.* (2001: 128) suggest, there is a sense of frustration

that the ideas suggested in the original *Energy and the Urban Environment* study have not been put into practice. Nevertheless, the review continues to advocate the implementation of new technologies, information dissemination and partnership between different actors across the city as the means of reducing energy use. Working within the same techno-rationalist assumptions of the new localism as the original study and the CCP programme, it 'is almost as if the authors underestimated the difficulty of forging new social networks and communities of interest, believing instead that providing information would promote change automatically' (Evans *et al.* 2001: 128). In this view, the policy process is assumed to be linear and rational, where the end goal of reduced energy consumption is seen as meeting with unanimous approval. However, as we illustrate through an analysis of the land-use planning process below, the local politics of climate change are far from uncontested.

## Planning for climate protection

In the UK, the rhetoric of using the planning system as a means through which to implement sustainability in general, and climate change policy in particular, has grown in strength over the past decade. While not all policies which may have some bearing on energy use have been included within planning strategies primarily in order to address climate change, the issue has provided a significant rationale for emerging discourses which advocate the need for urban sustainability. Here, we consider these debates and how they have been played out within the planning process in Newcastle.

### *Planning and urban sustainability*

The planning system essentially has two functions: to plan for development and to control it. These are undertaken by different parts of local government responsible for development planning and development control, under the direction of national legislation and guidance notes (Rydin 1998a).[6] In Newcastle, the Unitary Development Plan (UDP) fulfils both the strategic and control functions of planning. Although these functions are guided by central government, in effect 'local authorities are the main agent for planning in the UK, with the power to control development through regulatory decision-making and prepare development plans that shape the course of future development in their area' (Bruff and Wood 2000: 520). With the passing of the 1991 *Planning and Compensation Act* and its emphasis on the development plan as the main consideration in development control decisions, the importance of local planning was reinforced (Tewdwr-Jones 1995). However, while there is a considerable degree of local discretion in planning, it is a process which takes place within a social, political and economic context which is influenced at a number of different scales, and, as we argue below, the power of local authorities remains restricted by government legislation and guidance. Furthermore, the neo-liberal approach to planning adopted during the 1980s has left a significant legacy, with negotiation, bargaining and partnership as central to the process of planning as statutory mechanisms (Whatmore and Boucher 1993). Rather than being a process through which policy is directed, planning and plans are a forum in which policies and principles are continually negotiated and reinforced. Nowhere is this more evident than with respect to environmental protection (Owens and Cowell 2002).

The land-use planning system is an arena through which the meanings and values assigned to the environment have been contested. From initial debates surrounding

**Box 5.1: Principles of sustainable development**

Sustainable development is widely cited as 'development which meets the needs of the present without compromising the ability of future generations to meet their own needs' (WCED 1987). The principles of sustainable development include: a recognition that economic growth and environmental protection can, and must, be reconciled; intergenerational obligations; the pursuit of social justice; participation; and ecological responsibility and a recognition of the intrinsic value of nature (Connelly and Smith 1999: 3; Gleeson and Low 2000a: 3–6).

aesthetics, the provision of green space and the conservation of local environments, the 1990s witnessed a growth of concern for sustainable development (Box 5.1; see also Chapter 2) in land-use planning. Commentators suggest that this led to a rediscovery of the strategic role of planning, diminished during the 1980s though resuscitated through the 1991 *Planning and Compensation Act*, and therefore rescued planning from potential obscurity (Owens and Cowell 2002: 21).

However, it has not only been planners that have seen sustainable development as central to their project. Since the early 1990s, 'successive governments have identified the land-use planning system as one of society's key mechanisms for delivering more sustainable development … [and] this has become a clear aim of central government policy' (Bruff and Wood 2000: 519). Given its concerns with land-use, and the impact of land-use on issues such as biodiversity, energy and transport, it is clear that any move towards sustainable development relies in no small part on planning policy and practice. To this end, government guidance during the 1990s advocated a new and expanded role for land-use planning in addressing environmental protection. In the early 1990s, revisions to PPG1 (DoE 1992a), which sets out the scope and intent of the land-use planning system, and PPG12 (DoE 1992b), on the preparation of development plans and regional planning guidance, included specific reference to the role of planning in addressing sustainable development. Land-use planning was also seen as integral to tackling transport related issues, including pollution, as articulated in PPG13 on transport planning (DoE and DoT 1994; Owens 1994: 446). In each case, an expanded remit for land-use planning, one which addresses the environment in the 'widest sense' and includes new concerns for issues such as climate change and resources alongside traditional issues such as amenity and green space, is endorsed (Healy and Shaw 1994; Owens 1994).

In the wake of these changes to government guidance, evidence indicates that, on a rhetorical level at least, sustainable development was included within the process of plan-making. Studies of structure plans (Counsell 1998, 1999) and UDPs (Bruff and Wood 2000) suggest that by the mid-1990s the concept of sustainable development was being integrated into the majority of strategic planning documents. However, this process has been far from even, with considerable (regional) variation in the ways in which sustainable development has been interpreted and included, with traditional concerns for green spaces, amenity and economic development holding sway over the inclusion of measures to address global environmental problems. For example, evidence suggests that there were few policies and measures related to energy conservation in the majority of strategic plan-

ning documents or development control decisions (Bruff and Wood 2000; Counsell 1998). Despite the inclusion of sustainable development as a policy principle within planning guidance at national and local levels, Owens and Cowell (2002: 24–25) argue that 'there was still, by the end of the 1990s, a sense of implementation deficit. Real changes on the ground – to the nature and form of development, or to the intensity of conflict over land-use – were not readily discernible, or at least could not unambiguously be identified as sustainability in practice.'

Nevertheless, the importance of sustainability to land-use planning, and vice versa, continued to be emphasized. Further revisions to PPG1, PPG3, PPG12 and PPG13 stressed the role of land-use planning in sustainable development, through, for example, promoting increased urban densities, mixed land-use developments, providing urban green spaces, creating good design and reducing the need to travel (DETR 2000c; DETR 2000b; DoE 1997a; DTLR 2001b). This formal policy guidance has been supplemented by best practice documents, such as *Planning for Sustainable Development* (DETR 1998a) and *Urban Design in the Planning System* (DETR 2000d), and given impetus by the report of the Urban Task Force, *Towards an Urban Renaissance* (UTF 1999), which argues that sustainable development should be a cornerstone of any attempts to improve and promote urban places. This 'urban renaissance' agenda, sometimes referred to as 'new urbanism' (see Chapters 9 and 10), appears to be having some impact on the formation of strategic plans (Carmona 2001). Central to these debates have been the implications for energy use within urban areas, and the potential scope for reducing emissions of greenhouse gases (Table 5.1). The argument is made that the use of energy is dependent on both the form of urban development, that is, its location and density, and its design (Banister *et al.* 1997; Capello *et al.* 1999; Owens 1986a, 1992). In Newcastle, the 1992

*Table 5.1* National planning policy guidance relating to urban energy use

| *Ways of addressing urban energy use through the planning system* | *Examples of national PPG* |
|---|---|
| Reduce the need to travel | Promote development in inner-city locations and on previously developed land<br>Promote mixed land-use developments<br>Increase housing densities |
| Reduce the number and length of motorized journeys | Locate major developments where they are accessible by public transport links<br>Include public transport, cycle and walking access in development design<br>Abandon minimum parking standards for new development and restrict land-take for roads and parking |
| Design for energy conservation | Take advantage of passive solar energy in the design of developments<br>Include energy conservation standards for buildings in design guidance |
| Include renewable energy | Promote the use of CHP in development proposals |

*Note:* These policy principles, amongst others, are included in one or more of the following documents: PPG1 General Policy and Principles (DoE 1997a); PPG3 Housing (DETR 2000b); PPG12 Development Plans (DETR 2000c); PPG13 Transport (DoE and DoT 1994; DTLR 2001b); PPG22 Renewable Energy (DoE 1993); *Planning for Sustainable Development: towards better practice* (DETR 1998a*); By Design. Urban design in the planning system: towards better practice* (DETR 2000d).

*Energy and the Urban Environment* study argued that planning would have a significant role to play if reductions in energy use from the transport sector and the provision of alternative energy supplies, such as renewables, district heating and CHP, were to be forthcoming. In line with the conclusions of this study, Newcastle's UDP, the strategic guide to development planning and control in the city, explicitly recognizes its potential impact on climate change:

> At the global level the main [environmental] concern which can be addressed by the UDP is the emission of greenhouse gases which cause global warming and potentially damaging climatic changes.
>
> NCC 1998: 43

The UDP suggests that reductions of carbon dioxide emissions by 30 per cent of 1990 levels by 2010 are achievable through 'proposals that can be assisted by land-use and transportation planning' (NCC 1998: 44). To this end, two types of policies are included: those which attempt to reduce the use of energy through shaping the urban form, such as reducing the need to travel; and those which address energy use through design, for example through the use of energy efficiency standards and the inclusion of renewable energy measures (NCC 1998: 44–45). In the discussion which follows, we examine each in turn.

### *Shaping the urban form*

That the planning system should take into account the energy implications of the form and placement of new development is articulated in various guidance documents produced by central government, including PPG1, PPG3, PPG12 and PPG13 (DoE 1997a; DETR 2000b, 2000c; DTLR 2001b). The argument is that development should be planned in such a way as to reduce the need to travel and reduce dependence on motorized vehicles, and that this can be achieved through, amongst other means, the redevelopment of brownfield land in inner-city locations, increased housing density, planning for mixed-use developments, and placing development near existing public transport links (Table 5.1). For example, PPG3 suggests that 60 per cent of all new housing development should take place on brownfield sites, and includes new recommendations for the density of housing developments and upper limits on the amount of car parking spaces provided per household (DETR 2000b). Not only do such policies attempt to reduce the amount of energy used through car travel, but they also provide a means through which to try and balance the debate about the need for housing growth and concerns for the conservation of greenfield sites (Murdoch 2000).

In response to the development of government guidance, and their own work on the relations between energy use and the built environment (NCC 1992), Newcastle's UDP contains policies to place development where it is easily accessible by alternative modes of transport and reuse brownfield land in inner-city areas (NCC 1998). However, it is also clear that the primary purpose of the UDP is to attract new investment and economic growth to the region, and to stabilize declining population levels. In order to do this, it is argued that Newcastle must make the appropriate number and type of sites available, including greenfield areas, for housing and economic development (NCC 1998: 5–7). The definition of housing need here is not based on projections of growth trends, but rather on the aspiration that population levels will stabilize and new people

will move into the area as economic recovery takes place. On this basis, during the preparation of the UDP, it was initially argued that the need for housing provision would exceed the number of sites available in the inner city. However, as the debate evolved, the argument shifted away from a concern for the capacity of the city to absorb housing demand, towards a discussion on the type of housing – low density and larger homes – to which the economically active population were seen to aspire. It was also argued that a greenfield site could potentially accommodate a high-tech business park, which would in turn attract the economically active to Newcastle. In this context, the UDP allocated a site which had previously been on greenbelt land for a mixed-use business park and housing development, the Northern Development Area or Newcastle Great Park (see Figure 5.1):

> In Newcastle, strategic issues are the revitalisation of the economy and regeneration of urban areas. Reuse of vacant and underused urban land will play a part and will help achieve sustainable development. However, due to the shortage of development land and the need to avoid town cramming, meeting strategic needs requires some development of greenfield sites for jobs and houses. Such development will have an

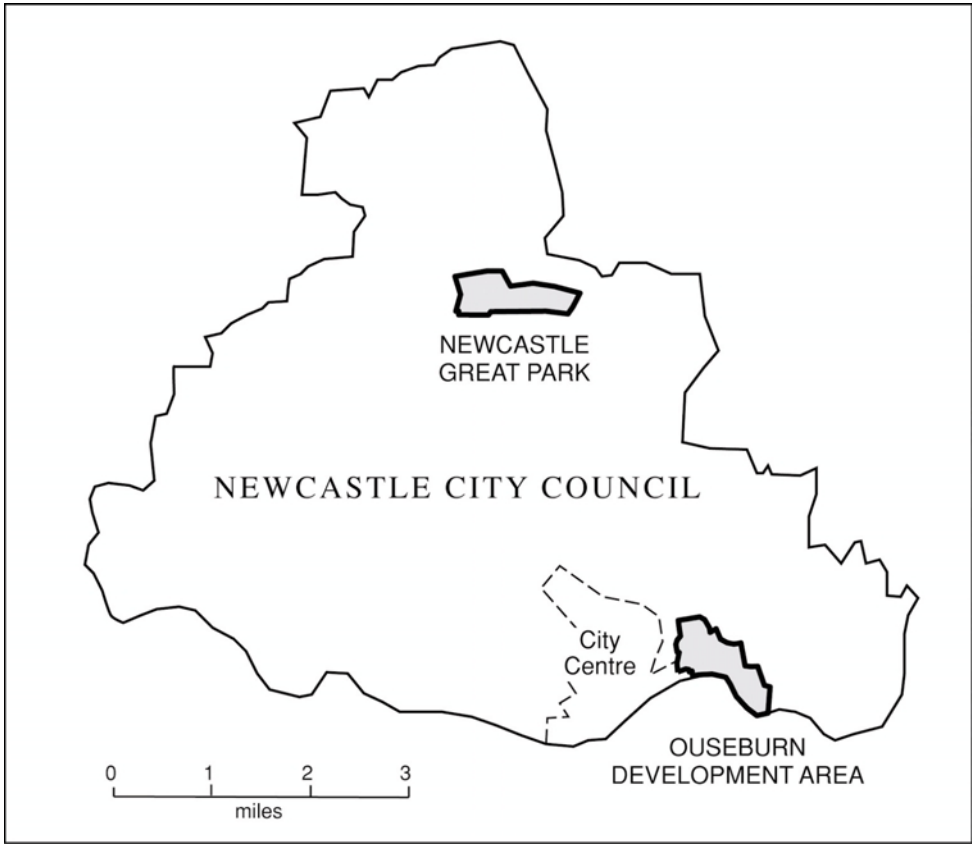


*Figure 5.1* Map of Newcastle City Council, UK, showing Newcastle Great Park and Ouseburn Valley development areas

> impact on the environment. An essential role of the UDP is to minimise this impact so that depletion of resources is kept to an acceptable level.
>
> NCC 1998: 43

Rather than going against government guidance, it was argued, this location would in fact reduce the need to travel as it would retain people within the city boundary, where distances to work are shorter and public transport options are available, rather than allow the trend of relocation to nearby market towns, which increases commuting distances, to continue. The scheme remained controversial as it worked its way through the planning process, so that days before the public inquiry the developers withdrew to rework their proposal in line with new government thinking on transport and housing.

During the evolution of the UDP and proposals for the Northern Development Area, new discourses concerning the regeneration of Newcastle were emerging in line with (the yet-to-be published) PPG3 that development should take place, in the first instance, on brownfield and/or inner-city sites. In 1998, just as the original proposals for Newcastle Great Park were withdrawn, Newcastle City Council launched a new regeneration strategy, *Going for Growth* (NCC 2002). The strategy brings together available land for development in the east and west of the city, and has caused considerable controversy by suggesting that significant amounts of housing should be demolished and rebuilt in order to deal with issues of population decline and urban decay. In recognizing the potential for brownfield development within Newcastle, the *Going for Growth* strategy appears to contradict the original rationale of the UDP, namely, that there was insufficient land to provide for the predicted increase in housing demand within the city. In order to overcome this criticism, the reworked bid for Newcastle Great Park contained new standards for energy efficiency, provision for public transport and a scheme to tie housing development at this greenfield site to the development of brownfield sites within the city. Through this Joint Venture 2-for-1 Housing Agreement (DETR 2000e), for every new home built in the Newcastle Great Park, two must be constructed on inner-city brownfield sites:

*R:* The legal agreement that we've got with the consortium about developing the Great Park is an innovative one, which actually links the greenfield and brownfield developments together. … If the market doesn't bring forward the brownfield sites, then the consortium that are doing the Great Park have got to do it. … It's not a gentleman's agreement, it's a legal agreement that, you know, we could enforce if we wanted.

*HB:* How were you able to bring that legal agreement to bear?

*R:* … because it was such an attractive development that they were willing to [do it].

Interview, Planning Officer (b), NCC, 2000

Although by concentrating development in inner-city, brownfield areas, the *Going for Growth* strategy does have the potential to reduce the need to travel, and therefore the emissions of carbon dioxide from the transport sector, it remains to be seen whether this will have any impact in practice. As some commentators have warned, the ability of the planning system to affect transport decisions made by individuals is only partial, and relies on an integrated approach in which, for example, economic instruments and information are also used to manage demand (Banister *et al.* 1997: 141; Owens 1992; see Chapter 6). Furthermore, the policies of regeneration and development advocated in the UDP and *Going for Growth*

are underpinned by the aspiration that the city will grow in economic and population terms. Given that Newcastle is experiencing population decline, these assumptions of population and household growth are based on aspirations for the success of economic regeneration strategies rather than projection from current trends. This raises the issue as to whether such housing 'need' is being double-counted, both within regions of population decline and in regions, such as the south-east, which are experiencing in-migration and population increases. Whether this is the case or not, Naess (2001: 511) argues that a question remains as to 'whether it can at all be said to be consistent with a sustainable development to increase the building stock considerably above present levels in wealthy countries'. The idea of limiting housing demand goes against both the central purpose of the planning system, to provide for a continued and adequate supply of development land, and the discourses of growth and regeneration which dominate Newcastle City Council. It is clear that in this case, tensions between environmental protection and economic growth do not disappear once attempts to reduce energy use and emissions of greenhouse gases are written into planning policy. Rather, these conflicts are rendered more visible, and more acute.

### *Good design?*

The other means through which the planning system is seen to be able to affect energy use is through the design of developments and individual buildings (Table 5.1). While standards of building design are controlled by national building regulations, development plans can also include guidance on energy efficiency and renewable energy measures for individual buildings, and for the layout of developments (DoE 1993; DETR 1998a, 2000b, 2000d; DTLR 2001b). The UDP suggests, amongst other measures, that developers look to improve the energy efficiency rating of new buildings above national standards, incorporate passive solar design and include renewable energy or CHP within projects (NCC 1998: 44–45). In addition, supplementary guidance notes for development control procedures which encourage energy efficiency have been developed (NCC 2000).

To date, these criteria have been implemented primarily either where the Council owns the land which is to be developed or where developers are eager to gain access to particular sites and avoid delays in the planning system. One example of the first case is the Ouseburn Valley in the east-end of Newcastle (see Figure 5.1), where the development brief included consideration of energy efficiency and the provision of alternative modes of transport, and the evaluation of development bids was conducted on this basis before considering costs. Although this means that sustainability criteria are given significant weight, it has the downside of potentially leaving the City Council losing revenue from the sale of land, and therefore may not be a strategy which the Council is willing to follow on a large scale. The second case, where the developers are keen to gain access to particularly valuable sites, is most evident in the case of Newcastle Great Park, although even in this situation some officers and members felt sufficient pressure had not been bought to bear, and that the measures to address energy use were tokenistic and unlikely to have a significant impact. Moreover, these instances are few and far between, and in general, local government officers felt that it was difficult, given their current powers within the planning system, to address the issue of reducing energy use through design requirements. In making decisions over development proposals, officers are required to make sure that they are in line with the development plan and other 'material considerations'. In the light of these deliberations, officers can impose planning conditions or negotiate planning obligations with the developer in order for the development to go ahead (see Box 5.2).[7]

**Box 5.2: Planning obligations**

Under Section 106 of the Town and Country Planning Act 1990, local planning authorities can enter into agreements with landowners which are collectively known as 'planning obligations'. These obligations, which are currently under review, can include restrictions on the use and development of the land, requirements for certain activities or processes to be undertaken on the land or financial contributions to the authority to contribute to the infrastructure needed to accommodate the development or to compensate for its impacts. The use of 'Section 106' agreements as they are often known is guided by central government so that they should 'be relevant to planning and directly related to the proposed development … they should only be sought where they are necessary to make a proposal acceptable in land-use planning terms' (DoE 1997b).

In the early 1990s, environmental considerations began to be taken into account in the process of development control decisions, through the concept of 'environmental planning gain' (Whatmore and Boucher 1993). The argument was that the detrimental effects of a particular development on the environment could be taken into account through the negotiation of contributions which the developer would make to mitigate or compensate for environmental damage. Winter (2001b) suggests that such arguments could be used to widen the scope of material considerations and consequent planning obligations, so that:

> in the light of the environmental impacts associated with the energy consumption of dwellings, it may be perfectly legitimate for planning decision-makers to start to impose on residential developers design standards which seek to minimise such impacts by achieving layouts which optimise solar gain or minimise heat loss. … It does not stretch the imagination too far to see that … routine planning control will attach increasing importance to such issues in pre-application discussions and in the negotiation of planning conditions and obligations. The flexibility of the legal concept of 'material considerations' means that this can be achieved without a specific change in the law relation to such planning issues.
>
> Winter 2001b: 52

However, the same author cautions that, currently, 'it is unlikely that the courts would require a local planning authority to exercise its discretion on matters such as global emissions and the wider environment very rigorously' (Winter 2001b: 51). In short, while the concepts of material consideration and planning obligation allow for development control decisions to take wider environmental issues into account, whether or not such interpretations will be upheld in practice is moot. Planners argued that it was only in the rare cases where the Council owned the land or where development pressure was strong that planning obligations to this end could be negotiated. Whether this would contribute to sustainable development was also questioned, given that the negotiation of one type of planning obligation was usually seen to be at the expense of another, so that energy efficiency would have to be traded against, for example, public transport and improved social

facilities. Furthermore, planners felt that interpreting material considerations in such a way that a development application could be refused on grounds of its contribution to emissions of greenhouse gases would be untenable without increased specific guidance from central government, and would risk the Council being fined by the planning inspector:

*R:* … at the moment you certainly can't refuse planning permission on the basis that, you know, the design's all right but there's no sustainability dimension. … And if that became then a reasonable reason for refusal, that would be a step. But I can't see it at the moment, in the short term … if that was the case … that really would strengthen the local government's arm, because you would be able to turn things down, and not be frightened that it was going to come to a public enquiry.

Interview, Planning Officer (b), NCC, 2000

*R:* PPGs are becoming more environmentally conscious [and] … rigorous all the time, but so far … they don't seem to mention much about energy efficiency in buildings, it is mentioned but nowhere does it say, you know, if a building is … facing the wrong way or this, that or the other, you can refuse it, or anything even vaguely hinting at that. … We hoped that PPG3 … would mention a bit more on energy efficiency, and it does talk about design, and good design, which you could argue energy efficiency comes into, but it doesn't actually talk about it specifically,[8] and I think that's because … no one knows where it falls between building [regulations] and planning.

*HB:* … so it's still up to people in a specific local authority to push the issue if they want to?

*R:* … well, encourage, yes, very much so. I mean personally, I would be in favour of tighter [controls], to refuse applications, but then it's not me who pays the cost of development. … We have actually refused an application quite recently, one of the reasons for refusal was that the housing was taking absolutely no account of the site's southerly aspect and therefore passive solar design could have been incorporated, but we wouldn't have refused it had that been the only reason, well, at least I don't think so.

Interview, Planning Officer (c), NCC, 2000

At issue here is not whether energy considerations should be taken into account, for policy planning guidance on development plans, transport and housing all include energy related criteria as an issue with which strategic planning should be concerned. Rather, tensions occur over the weight that such considerations should be given. While the UDP suggests that energy considerations are to be encouraged, other issues, primarily the provision of housing and development sites in such a manner so as to attract economic growth and stabilize the population, are given more weight. A further problem, as one planner mentions above, is the boundary between land-use planning and building regulations in controlling emissions of greenhouse gases from the (newly) built environment. Winter (2001a: 28) suggests that there is no necessary legal conflict, given that planners could direct general energy specifications for a development site without intruding on the terrain of the building regulations which regulate in specific detail criteria such as insulation standards (see Chapter 7). However, there is clearly a degree of confusion amongst planners as

to where the boundaries lie in practice, and an understanding that energy efficiency considerations will not be given any significant weight in development control decisions.

Changes to PPG3 may have helped to clarify the expanding role for planning in the area of energy efficiency, with the recommendation that planning policies should 'promote the energy efficiency of new housing where possible' (DETR 2000b), but this still leaves wide open the question of how this is to be translated into practice (Lainton 2000: 185). Although the scope for affecting the energy use of new buildings has been increased through informal arrangements with developers, it remains largely a matter of personal intervention on the part of individual officers using the arts of persuasion and delay, or of the Council using its own leverage, primarily of land ownership. While key players, such as the volume house builders, remain unconvinced of the need to include further energy considerations in planning, such informal arrangements are likely to be few and far between.

### *Climate protection, politics and power*

Despite changes to government guidance and the recognition, both within the *Energy and the Urban Environment* study and the UDP, of the critical role of land-use planning in reducing emissions of greenhouse gases from urban areas, there is little evidence to suggest that the implementation of measures to address the energy consumption of new developments has been widespread in Newcastle. That there is an 'implementation deficit' between government guidance and local planning should not come as a surprise in a system characterized by at least a measure of local discretion, and commentators have sought to explain this in various ways.

First, it is often argued that the gap between rhetoric and reality is a reflection of the lengthy process of plan-making, so that new principles are only slowly absorbed into strategic plans. This does not explain, however, the lack of conspicuously sustainable developments on the ground, for national planning guidance can be used as a 'material consideration' in development control decisions even where strategic plans may be outdated. In Newcastle it is clear that critical planning decisions, such as the development of Newcastle Great Park, were informed by up-to-date government guidance. A further argument has been made that local planning officers, councillors and planning inspectors, who make decisions about development applications, lack sufficient knowledge or understanding of the concept to put it into action, or are subject to capture by local interest groups (Gilg and Kelly 1997; Winter 2001a, 2001b). Implicit within this argument is the assumption that once sustainable development has been determined within national planning guidance, or local strategic plans, the matter of dissemination and implementation should be straightforward. While a lack of information and inertia within the planning system are certainly issues to be addressed, this case-study suggests that problems with addressing climate change through the planning system are more deeply rooted.

In essence, the problems encountered in Newcastle (see Box 5.3)[9] can be placed in two categories. The first concerns the powers and autonomy of the planning system. The guidance contained within the UDP is soft, recommending that developers should be *encouraged* rather than *required* to take action with respect to energy use through the location or design of development. In part, this reflects the changing role of local authorities, away from regulation towards negotiation. However, it is also a result of planning legislation which does not give considerations of sustainability statutory weight, so that development applications can not be refused on such grounds. Moreover, the planning

**Box 5.3: Constraints encountered in acting on climate change via the land-use planning system**

- Reliance on knowledge and interest in energy as an issue on a few individuals within the planning system
- Lack of explicit government guidance on the role of planning in addressing climate change, so that energy considerations are not seen as legitimate grounds for refusal of development proposal
- Few precedents for negotiating planning obligations on energy criteria, and competition between different demands for planning obligations
- Potential loss of revenue from land sales where sustainability criteria are included
- Lack of interest in development industry in addressing energy issues
- Concern over driving developers away if criteria for planning permission are too stringent
- Conflict between development priorities and environmental aspects of sustainability

system is geared towards control or prevention, rather than proactive planning in which some forms of development can be promoted over others. Despite changes to government guidance, the planning system remains concerned primarily with the immediate impacts of land-use, and concerns for wider and cross-boundary environmental issues are only slowly making headway (Blowers 2000; Counsell 1998; Owens and Cowell 2002; Rydin 1995). In some instances in Newcastle, the ground on these issues has shifted. Where this is the case, three reasons can be identified: first, changes to central government guidance, for example on issues of transport and brownfield development; second, additional leverage held by local government through their ownership of the land; third, willingness on the part of developers to address sustainable development criteria in return for the perceived benefits of the development site. These findings give support to our argument, outlined in Chapter 2, that the politics of climate change can not be read from the 'top down', but are shaped through the negotiations of state and non-state actors over multiple levels of governance.

The second problem relates to the ways in which sustainable development in general, and energy use and climate change in particular, have been interpreted by actors in the planning system and local coalitions of interest. The rationale for development in Newcastle turns on issues of securing economic growth, stabilizing population decline and meeting housing demand. In an area of high unemployment and considerable social deprivation, environmental constraints on growth have not figured in local debates. Furthermore, the perception appears to be that the goals of economic growth and environmental protection are either irrelevant to each other or in direct opposition:

*R:* [The leader of the Council] saw what I was doing as too sort of nebulous and airy-fairy, you know … he almost pictured me out there with the Reclaim the Streets people, trying to stop [development] happening. And I said to him, you've completely misunderstood … there is a big difference between sustainable development and non-development, and … what we were saying was that

> development needs to be sustainable. … I mean the main thing that is driving the local authority now is *Going for Growth*. You know, it's very much about bricks and mortar, and expansion and growth are the sort of key words. … And occasionally they slipped the word sustainable in, and occasionally, you know, used energy conservation and stuff. But it was almost an afterthought. And it was all real stirring stuff, we'll make Newcastle great again … that seemed to be the message.
>
> Interview, Environment Officer (b), NCC, 2000

It is clear that, within Newcastle, attempts to integrate climate protection into the planning system have been restricted by the discourse of economic growth:

> *R:* As regards providing any strong regulation, any strong … planning restrictions … we're not in the business of keeping people out, we want businesses, we want development, so, in a sense, we would always be aware of that. Also, we don't have the powers really to restrict, or dictate what energy efficiency measures or [other] measures are included.
>
> Interview, Planning Officer (c), NCC, 2000

> *R:* We are definitely pro-development here, you know, we want development. Everybody wants more development … it's not a battle between public and private sector. There's far greater unanimity between the key stakeholders.
>
> Interview, House Builders Federation, Newcastle, 2000

Some commentators have suggested that there is no necessary conflict between fostering economic regeneration and climate protection, or that imposing 'limits' to growth may be counterproductive for the pursuit of sustainable development (Rydin 1998b). Indeed, as we suggested in Chapter 3, it is one of the central arguments of the CCP programme that climate protection and economic growth are mutually compatible. However, as Owens and Cowell argue:

> If sustainable development genuinely offered tangible synergies between economic, environmental and social objectives, a persistent implementation deficit would be surprising. That such synergies remain elusive suggests that the 'deficit' cannot simply be read as a set of predictable obstacles to, and delays in, translating aspirations into practice. Instead, it points to a more fundamental dislocation between competing interpretations of what it means for development to be sustainable.
>
> Owens and Cowell 2002: 25

Rather than indicating that an 'implementation gap' exists between national guidance on addressing energy use within the planning system and local practice, Newcastle's experience suggests that at issue is the matter of how sustainability is interpreted, in policy and practice, and how decisions are made between competing objectives. The approach adopted in government planning guidance and in Newcastle's UDP follows a fairly 'weak' interpretation of sustainability (see Chapter 2, Box 2.2) and a traditional view of the role of planning as confined to issues directly related to land-use and concerned with balancing different interests (Counsell 1998; Healy and Shaw 1994; Owens 1994; Owens and Cowell 2002; Selman 1995). Despite the emergence of strong interpretations of sustain-

ability in some local authorities and some issue areas, in terms of environmental capacities and limits to growth, these remain the exception rather than the rule. Where they do emerge at a local level, such approaches are often bought back into line after the process of public inspection (Bruff and Wood 2000; Counsell 1999; Murdoch 2000; Owens and Cowell 2002). As we argued above, in Newcastle 'strong' interpretations of urban sustainability, which take into account the wider environmental impacts of development such as climate change, have been possible only in exceptional circumstances. In part, this is because elements of strong sustainability, such as precaution and absolute limits, sit uncomfortably with the traditional role of planning, to provide land for development, and government guidance which embodies a presumption in favour of development.

More fundamental, however, has been the priority afforded to a particular interpretation of the need for housing provision and economic regeneration, in which the pursuit of economic, social and environmental objectives concurrently is seen as neither desirable nor possible. Both the *Energy and the Urban Environment* study and the CCP programme have been sources drawn upon by those seeking to define an alternative to 'development-as-usual'. However, the assumptions of new localism which permeate their shared approach to urban energy management, that policy change can be affected through increasing knowledge about local sources of greenhouse gas emissions, the implementation of technical fixes, and the widespread recognition of the win–win potential of such measures, also support a weak reading of urban sustainable development. In this context, and given the fragile connections between the CCP network and the City Council, the programme's lack of impact in the critical sector of land-use planning is hardly surprising. Far from providing a means for reconciling the competing objectives of planning, be they economic, social or environmental, evidence suggests that the integration of sustainable development into planning practice has revealed the very conflicts it is supposed to overcome (Bruff and Wood 2000; Owens and Cowell 2002). Strong environmental considerations, such as the mitigation of climate change, are sidelined. We consider the implications of these findings for the role of transnational networks in environmental governance in the concluding chapters of this book.

## Conclusion

The issue of climate change has clearly become part of the rationale for energy management, transport and planning policies within Newcastle City Council over the past decade. The *Environmental Charter* for the city places climate change at the heart of local environmental policy (NCC 2001). However, there is little evidence to suggest that this is a result of Newcastle's membership of the CCP programme. The creation of inventories of emissions of greenhouse gases and subsequent policy development in the early 1990s, through the *Energy and the Urban Environment* and associated studies, largely took place before Newcastle joined the programme. Nevertheless, the shared approach to urban energy management between these studies and the CCP approach has meant that, at least for a short time, the programme was seen as beneficial to the Council. The CCP programme also gave individuals within the Council a range of European contacts, from which they could draw funding and support. However, it was only one of a number of networks providing such access, and its influence is difficult to separate from Newcastle's involvement with the CITIES programme and the energie-cités network. Furthermore, connections between the CCP network and the City Council were fragile, and vulnerable

to changes in personnel and priorities, so that by the end of the 1990s, the programme had been virtually abandoned.

The *Energy and Urban Environment* study, and its recommendations for action to reduce emissions of greenhouse gases from across the city, has fared little better. In part, this is also due to changes in personnel which have meant that its champions have left the Council during the past decade. However, as we saw in the example of planning policy, putting the good intentions expressed in policy documents into practice is far from straightforward. While energy and climate change considerations have been explicitly recognized within the City Council, planners have been constrained by two primary factors; the weight attached to guidance on energy-related matters; and the priority of climate change specifically, and the interpretation of sustainability generally, within the politics of local development. Where implementation has taken place, it has been as a result of additional weight which planners have been able to give environmental considerations due to changes in government guidance, ownership of development sites or the willingness of developers to negotiate in order to gain access to a desired site. However, these examples are few and far between, and the majority of planning decisions are couched in favour of development and the need to secure economic prosperity and increased housing numbers in the city; goals which are seen to be threatened by the imposition of explicitly environmental criteria on development, such as climate protection. Far from removing conflict from the planning system, attempts to pursue sustainable development crystallize the tensions inherent in addressing social, economic and environmental objectives at different scales simultaneously. In this light, the ambitions of the *Environmental Charter* and its renewed commitment to address the contribution of the city to climate change (NCC 2001) may not be realized without significant changes to the ways in which the connections between development, growth and the environment are understood within planning practices.

This case-study has shown that processes of urban energy management are shaped through a number of 'spheres of authority' (Rosenau 1997), including influential individuals within the local authority, local coalitions of state and non-state actors advocating particular discourses of urban development, national planning guidance and its interpretation within the local planning system, transnational networks and the funding opportunities and priorities of the European Commission. Within this context of multi-level governance, the CCP programme has been one factor which has led to the involvement of the City Council in transnational networks, through which the principle of local responsibility for climate protection was sustained and interpreted. However, because of its assumptions about the agency of local governments and the consensual nature of energy management goals, as well as the limited connections established between the CCP network and the City Council, the programme did not contribute to the development of local networks through which the climate protection agenda could be mobilized and maintained both within and outside the local authority. In effect, this has meant that the programme has had little impact on the politics of climate change within Newcastle, where the example of land-use planning suggests that entrenched policy communities have continued to advocate business-as-usual.

# 6 Cambridgeshire

## Climate protection and local transport policy

In the UK, the transport sector is the fastest growing source of greenhouse gas emissions. In this chapter, we examine how climate protection policies are being pursued in the arena of local transport planning in Cambridgeshire.[1] Located in the east of England, the county is known both for the university town of Cambridge and the recent boom in high-tech industries in the area. During the 1980s and 1990s, parts of the county in and around Cambridge (the Cambridge subregion; see Figure 6.1) have experienced high levels of growth in information and communications technology, biotechnology and related industries. This high-tech revolution, often referred to as the 'Cambridge Phenomenon', has earned the area the label 'Silicon Fen' after its more famous counterpart, Silicon Valley in California. However, while the economy of Cambridge and its surrounding areas has continued to grow, other parts of the county suffer from high levels of economic and social deprivation, exacerbated by the concentration of employment and a lack of affordable housing in the Cambridge subregion. As we argue below, managing the Cambridge Phenomenon, and consequent demands for housing and traffic growth, has provided the central rationale for planning strategies in the county, to the virtual exclusion of other concerns, including climate protection.

In the first section, we examine why Cambridgeshire joined the CCP programme, and its impacts on policy development within the Council. In this case-study, connections between the CCP network and the local authority have not been established, with the result that the impact of the programme has been minimal. We then focus on the transport sector, providing an overview of the national policy context in the UK during the 1990s and an analysis of how local transport planning has evolved in Cambridgeshire. We argue that national and local recognition of the need to manage demand for transport has in part been sustained by the recognition that addressing climate change requires a reduction in the number and length of car journeys. However, while different strategies of demand management have been implemented within Cambridgeshire, these have been seen as additional, rather than as an alternative, to a continuing strategy of providing for traffic growth, and the imperative of climate protection has carried little weight. In conclusion, we reflect on the impacts of the CCP programme in Cambridgeshire, and the implications of these findings for understanding the governance of climate change.

### Energy management and climate protection

Since 1977, in response to concerns about the price of energy, Cambridgeshire County Council has followed a programme of promoting energy efficiency within its own buildings. However, it was not until the early 1990s that the Council began to consider energy

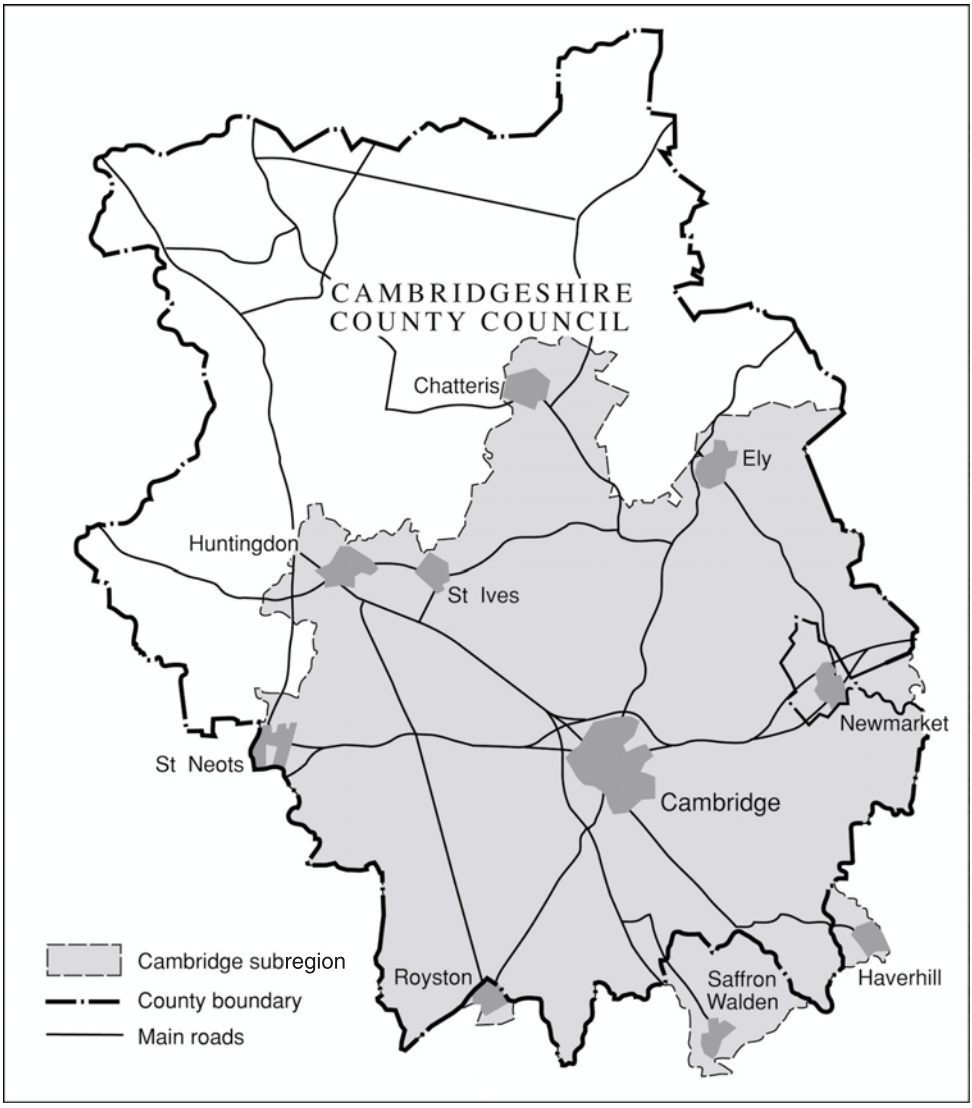


*Figure 6.1* Map of Cambridgeshire City Council, showing the Cambridge subregion

use and its environmental impacts as a significant issue across the county. At this time, there was considerable interest among council officers and members in energy management and the impacts of local action on reducing greenhouse gas emissions. An energy strategy group was formed, including the then Chief Executive of the Council, the Head of Environment Programme, other officers from the planning and property departments, as well as representatives of schools and libraries (CCC 1995a: 18). The principal remit of this group was to develop a strategy which would enable the Council to meet its chosen target of a 10 per cent reduction in corporate energy consumption over the period 1994–1997. The group was also charged with the responsibility of developing a broad

strategy to address energy use and emissions of carbon dioxide across the county, in line with its commitment to the Friends of the Earth Climate Resolution:

> The County Council has adopted Friends of the Earth's Climate Resolution, which includes an ambitious target of reducing $CO_2$ emissions due to energy and transport use in the County by 30% compared to 1990 levels, by the year 2005.
>
> CCC 1997: 38

As we saw in the case of Newcastle (see Chapter 5), during the early 1990s local authorities who joined the Climate Resolution were recruited by ICLEI to the CCP Europe programme. That this recruitment drive was successful in Cambridgeshire was due to the interest of the energy strategy group, and in particular to one Labour councillor who saw participation in the programme primarily as a means of raising the profile of the issue of climate change locally. In the wake of the formation of the energy strategy group, and membership of the Climate Resolution and CCP programme, Cambridgeshire County Council produced both an in-house *Energy Conservation Strategy* and a community-wide *Carbon Dioxide Reduction Strategy* (CCC 1995a, 1996). Although the CCP programme is not mentioned explicitly in either document, the style adopted in each echoes its milestone approach (see Chapter 3), emphasizing the need to monitor emissions of greenhouse gases, to set targets and to take action initially where additional benefits, such as financial savings or improvements in local environmental quality, can be realized. This approach has been most apparent in the strategy adopted to address energy efficiency within the Council, although there is no evidence to suggest that this was due to the Council's membership of the CCP programme. The strategy has focused on the 'quick wins' available: low-cost measures which can make cost-effective savings in a short period of time. Measures which have been implemented include: the computerized monitoring of energy consumption; installation of energy efficient equipment and heating controls; the use of the Council's good housekeeping fund for energy efficiency improvement loans; and providing advice on energy efficiency to building managers and staff (CCC 1997, 1999). Indications are that this approach has been relatively successful, as 'energy consumption continues to decrease while improved measurement sophistication is giving … a clearer picture to aid future goal setting' (CCC 2000a: 13). For example, in 2000 energy use within the Council had fallen by 4 per cent compared to 1999 levels (CCC 2000a: 3). However, falling energy costs, as well as changes to local government administration which have meant that council buildings are no longer managed centrally, have undermined the potential of such strategies (see Chapter 7).

Addressing energy use across the county has proven more difficult. In the early 1990s, Cambridgeshire completed an emissions inventory, adopted a target and plan for emissions reductions, and began to implement measures to this end. However, as the *Carbon Dioxide Reduction Strategy* makes clear, the County Council is only directly responsible for a small percentage of emissions of greenhouse gases. This is due in part to the limits on the powers of local authorities in the UK, so that while the Council is responsible for strategic planning, transport planning and education, it is dependent on other actors for the implementation of policy in these areas (see Chapter 4). The limited direct powers of County Councils mean that action to reduce emissions of greenhouse gases depends upon the influence that the Council can bring to bear on a range of other actors:

> The County Council is directly responsible for only 1.37% of the estimated $CO_2$ emissions for the county. Its overall influence in seeking to reduce emissions will therefore be crucial. The Council will seek to exercise that influence by raising public awareness, making information on local $CO_2$ emissions widely available, working with other local authorities, agencies and businesses, and when appropriate pressing the measures it believes are necessary at a national level. The Strategy will be reviewed regularly to check progress towards the target and it will continue to be developed in the light of local, national, and international developments and of technological advances.
>
> CCC 1996:1

Rather than forming the basis for a concerted programme of action, the purpose of the *Carbon Dioxide Reduction Strategy* was to act as 'a statement of intention by the County Council and an umbrella for a range of policies which will have the effect of reducing $CO_2$', such as the *Structure Plan*, the *Environment Action Programme*, the *Energy Conservation Strategy* and the *Transport Policy and Programme* (CCC 1996: 3). Although there is some uncertainty within the Council as to whether the strategy was ever formally adopted,[2] since the mid-1990s, strategy and policy documents in areas of planning, transport and environment policy have been explicit about their intention to contribute to reducing energy consumption and emissions of greenhouse gases (CCC 1995b, 1997, 1998, 2000b). However, there has been no assessment of the effectiveness of policy measures in contributing to emissions reductions and, as we illustrate below with respect to transport planning, these intentions seem to have been lost in their translation to specific strategies and objectives.

Despite their concern with local initiatives to address climate change, not one of these policy documents mentions the involvement of Cambridgeshire County Council with the CCP programme. Indeed, the only mention of the programme is in the 1998 *State of the Environment* report:

> Cambridgeshire County Council is a participant in the ICLEI Cities for Climate Protection. This is a global campaign which seeks to slow down the earth's warming trend and to improve local air quality and urban living, by empowering local government to reduce urban greenhouse gas emissions. … Cambridgeshire is one of only five participating Local Authorities from the UK. Five milestones have to be completed – emissions profile, emissions forecast, reduction target, local action plan approval and measures underway. By October 1997, Cambridgeshire has completed four milestones, with only the emissions forecast to enact.
>
> CCC 1998: 56

Although this report suggests that the Council is an active participant in the CCP programme, our analysis indicates that the completion of the milestones has been achieved by the Council independently of their involvement with the network. The initial target selected was on the basis of the Friends of the Earth resolution, and the emissions inventory and action plan conducted under the auspices of the energy management group without explicit engagement with the CCP programme. Moreover, connections between the Council and the CCP network were never fully established. The network was not used as a means through which to regularly monitor and report on local emissions of greenhouse

gases, to secure European funds, to access information or to connect with other local authorities in Europe. One problem officers had with establishing such links was the lack of human resources within the Council to invest effort in either reading through the information received from the CCP network or in applying for funding for further work. This suggests that, rather than providing a means through which local capacity to address climate change was enhanced, in Cambridgeshire the CCP programme had a representative function, so that the steps taken in the Council to address climate protection were broadcast to a wider audience than would otherwise have been the case.

It is clear that in Cambridgeshire, membership of the CCP programme has been essentially passive. Although it provided the opportunity for some individuals within the Council to raise the profile of climate change as an issue, and to structure local policy, in effect it has had little influence on policy or practice. While concerns for climate protection have been written into various parts of Council policy, with the exception of in-house energy use, the progress of these strategies and policies has not been assessed. In any case, by the late 1990s, with a local change in political power and the introduction of mandatory air quality standards by national government, other issues began to dominate local environmental policy-making so that the CCP programme and climate change took a back seat. In 2001, renewed interest in climate change was sparked by central government initiatives to engage local authorities with this issue. These included the Nottingham Declaration, a statement of intent to address the issue for which chief executives and council leaders were encouraged to offer support, and the *Councils for Climate Protection* programme (see Chapter 3). Cambridgeshire County Council responded by commissioning a new inventory of greenhouse gas emissions and signing the Nottingham Declaration, although they have not committed themselves to the rebranded CCP programme. Whether or not such initiatives will be translated into practice depends upon progress in a range of different policy sectors. In the next section, we turn to the issue of transport to assess opportunities and constraints encountered in reducing emissions of greenhouse gases.

## Climate protection and local transport planning

In the UK, the 1990s witnessed the emergence of a new discourse of transport planning, in which the assumption of providing for ever-increasing levels of traffic growth was challenged by a 'new realism' that transport demands would have to be managed. Here, we consider these debates and their implications for climate protection, and examine how the principle of demand management has been interpreted and implemented in Cambridgeshire. We then assess how far such principles have shifted policy-making away from the need to provide for traffic growth, and the constraints and conflicts which emerge in the local politics of climate change.

### *Transport and urban sustainability*

In the UK, levels of personal mobility, fuelled by the use of the car, have grown exponentially over the past fifty years. At the same time, urban areas have expanded and the locations of housing, employment, shopping and leisure have been dispersed through the urban sphere. While associations between land-use and transport defy simplistic explanations, what is clear is that an upward spiral of mobility, dispersal and decreasing density has characterized urban development during the second half of the twentieth century

(Owens and Cowell 2002: 78). As Banister (1997, 1998) suggests, this has led to a more complex pattern of urban transport, as demand for car travel and levels of car ownership increase, and more frequent and longer trips are made. Initially, the response of local authorities, including Cambridgeshire, was to seek to accommodate the demand for increased car travel through the provision of new roads and car parking facilities, the design and layout of new suburban housing, and the development of out-of-town retail and business parks. At the same time, the immediate impacts of car travel on the local environment and communities – loss of green space, noise, visual intrusion and accidents – were addressed through attempts to screen traffic from residents and engineering safer roads. However, such concerns were seen as secondary to the need to provide for the predicted increases in traffic growth (Owens and Cowell 2002: 84).

During the past two decades, this 'predict and provide' approach has been challenged. By the late 1980s, it was clear that investment in road provision could not cater for forecasted levels of traffic growth. While initial responses from the then Conservative national government were to increase spending on infrastructure, it soon became clear that this could not be maintained in line with demand (Goodwin 1999; Owens 1995a). This realization was compounded, in the early 1990s, by a number of other factors, which together are frequently argued to have led to the evolution of a new logic of transport planning – the so-called 'new realism'. The factors include: the recognition that new roads often generate traffic such that the effects fundamentally undermine any benefits from congestion relief (SACTRA 1994); the political difficulties presented by the increasing popularity and militancy of anti-roads protestors; a more restrictive public sector spending climate; and the need, in the wake of Rio, to develop a credible sustainable development strategy. It was argued that current traffic levels, notwithstanding those forecast, were not sustainable.

Economically, concerns were raised about the impact of the growing levels of urban and inter-urban congestion on businesses and economic efficiency. From a social perspective, the impacts of traffic on health, both directly through accidents and indirectly through air pollution, as well as the equity issues raised for those without access to a car, began to enter the debate. Perhaps most significant however, was the recasting of the environmental impacts of traffic in global terms. Alongside the problems of air quality, land take, noise and amenity, all of which had been recognized previously, the impact of the transport sector on climate change conferred additional legitimacy on those who argued that current trends were unsustainable (Goodwin 1999; Marvin and Guy 1999a; Owens and Cowell 2002). By 1998, the transport sector contributed 24 per cent of UK carbon dioxide emissions, and was the fastest growing consumer of energy (Banister 1998; RCEP 2000). While emissions of some air pollutants from vehicle exhausts have been reduced through the installation of catalytic converters, carbon dioxide levels have remained high and continue to rise. Furthermore, any gains which have been made in energy efficiency and emissions reductions may be undermined in the future if forecast levels of traffic growth continue unabated. In effect, it seems that technical fixes will do little to reduce emissions of carbon dioxide[3] without additional strategies in place (CfIT 1999a; Owens and Cowell 2002: 78; Potter *et al.* 2001). What is more, their applicability and effectiveness in addressing more complex and nebulous dimensions of sustainability, such as congestion or landscape degradation, is questionable (Owens and Cowell 2002).

In this context, a number of policy advisors promoted a new realist approach to the transport problem – given that demand could not be met, it would have to be managed.

Goodwin (1996: 8) argues that local authorities were critical in advocating the need for a new approach to transport planning, as it became clear that in urban areas road capacity could not be increased to meet predicted levels of demand. In the late 1980s, Cambridgeshire reduced its road building programme in the face of local protests and the growing realization that predicted levels of traffic growth could not be accommodated. During the 1990s, this call for demand management became widespread among local and national transport professionals and other interested bodies, and was interwoven with the argument for the need to better integrate transport, with other policy sectors and across and within transport modes. Although road building was not ruled out in principle, it was to be considered a last resort after other options, including improved public transport, changes to land-use planning and various means of traffic restraint, had been considered and found wanting. At the national level, funding and targets for local transport planning were reviewed and various road-building schemes dropped or postponed. With the new Labour government of 1997 came further innovations in the shape of the Department of the Environment, Transport and the Regions' White Paper, *A New Deal for Transport – Better for Everyone* (DETR 1998b), and its associated documents, the *Road Traffic Reduction Acts* of 1997 and 1998, as well as the *Transport Act* of 2000. Together, these introduced new methods of assessment and multimodal planning, and the requirement that each local authority develop a Local Transport Plan (Bulkeley and Rayner 2003), and articulated the need for an integrated approach to transport planning and the introduction of demand management measures.

In Cambridgeshire, the Council, both in advance of, and in response to, central government policy initiatives, has adopted elements of new realist thinking in its transport strategies. These have included: an acknowledgement of the need to take account of the broad social, economic and environmental issues which local transport planning influences; an emphasis on widening travel choice and managing demand; and the inclusion of a range of soft technologies through which to implement change (Marvin and Guy 1999a: 145). The Cambridge subregion exemplifies the kind of policy context in which Vigar (2000) suggests that the demand management elements of new realist thinking are most likely to be accepted: where a 'climate of desperation' concerning the local transport situation has arisen and/or where previous attempts at addressing such problems through increasing capacity have failed. In the decade 1989–1999, traffic levels in Cambridgeshire increased by 27 per cent, compared to the national average of 15 per cent, and traffic entering Cambridge increased by 8 per cent. Over 80,000 journeys, the vast majority of them by car, are made into Cambridge on a daily basis (CCC 2001), and there is little scope or desire for increasing the network capacity. However, in other parts of the county the argument is made that more transport infrastructure is necessary to promote development, and in the Cambridge subregion the nature and extent of appropriate demand management remains contested.

Given that, even if a widespread switch to alternative fuels or dramatic increase in fuel efficiency were to be achieved, reducing emissions of greenhouse gases from the transport sector depends on an absolute reduction, or at least containment, of the number and length of car journeys (Potter *et al.* 2001), demand management will be crucial to reducing emissions of greenhouse gases from the transport sector. Moreover, Cambridgeshire County Council has suggested that the transport sector is a critical area of action if overall targets to reduce local emissions of greenhouse gases are to be met (CCC 1999, 2000a). The conceptualization and practice of demand management is therefore a key arena when examining the local governance of climate change.

### *Managing demand*

In the context of local authority transport policy, Marvin and Guy (1999b) identify three kinds of demand management strategy: 'persuasive', whereby information is provided to the public; 'soft', where, in partnership with other organizations, authorities seek to negotiate improvements in public transport and encourage the establishment of travel plans; and 'hard', where physical or economic restrictions are placed on the use of private vehicles. Land-use planning policies to reduce the need to travel fall between these categories in that their purpose is to change the physical structure of cities, but for promotional rather than restrictive purposes. In Cambridgeshire, various strategies to manage demand have been tried, including encouraging modal shift, land-use planning, restricting access and reallocating road space, as well as the use of economic instruments. We now discuss each in turn.

Attempts to produce a modal shift in transport choices away from the car and to public transport, cycling and walking have included a combination of infrastructure development, and persuasive and soft forms of demand management. Throughout the 1990s, local transport strategies have focused on improving the provision of public transport. However, since the deregulation of local bus transport in the mid-1980s, local authorities in the UK have few powers through which they can directly influence the delivery of public transport systems. Instead, the focus is on indirect measures, such as infrastructure provision, including the development of Park and Ride sites and bus priority lanes, which in turn, local authorities hope, will lead to the provision of better services. These arrangements, between the local authority and the public transport provider, have been formalized through 'quality partnership' agreements on the standard and frequency of services which operators will deliver in recognition of investment by the local authority, but they remain voluntary. In Cambridgeshire, interviewees[4] were sceptical as to whether the approach adopted by the Council, which focuses on the development of a quality partnership for the provision of Park and Ride, would be effective in encouraging a modal switch or reducing traffic levels:

*R:* [The] main council transport policy in this region has been one of park and ride. Which, if you … define its objectives very narrowly, has actually been quite successful. … It's basically allowed the city centre to have more people come in and out of it than would otherwise have been the case. And so, if you like, [it] has perhaps improved Cambridge's economic prospects … I think we've got something like about three and a half thousand car parking spaces on the periphery of the town now, which we didn't have a few years ago. We haven't removed anything like that number of car parking spaces in the middle of town. What we've done is, we've put in some parking charges for on-street parking. But … by comparison that's not really having a big enough effect.

Interview, Council for the Protection of Rural England, Cambridgeshire, 2000

*R:* We have … provided the park and ride sites to try and improve accessibility into the city centre. But traffic just keeps growing. Cambridgeshire keeps growing. And that's one of the major obstacles which we need to … address.

Interview, Local Transport Plan Officer, CCC, 2000

Claims like those raised in the first quote above have been rebuffed by the Council, on the basis of evidence of rapid growth in the use of the Park and Ride facilities, falling

traffic levels coming into the city centre and the high percentage of previous car drivers who now use the facility (Menzies 2000; CCC 2001). However, traffic levels entering Cambridge, rather than the narrowly defined city centre, remain constant (CCC 2001), suggesting, in line with the second interviewee above, that Park and Ride has not reduced the number and length of journeys being made across the city. Evidence from elsewhere in the UK suggests that 'there is a consistent prima facie case that Park and Ride may attract a significant minority of its users away from public transport services outside the town centre' (Goodwin 1998: 117), in turn undermining other bus services and creating new car journeys outside the city centre. However, in Cambridgeshire, the improvement of some rural bus services has also led to increased use of public transport, albeit in selected areas of the county. Whatever the reality of the impact of Park and Ride on traffic levels in the Cambridge subregion, it has acted as a means through which other policy measures, such as increased parking charges in Cambridge or additional bus lanes, can be justified and funded (Menzies 2000). Measures to encourage the use of alternative modes of transport have likewise focused on the provision of infrastructure, for example, additional kilometres of cycle track or pavement improvements. As Marvin and Guy (1999a: 143) suggest, this reflects the institutional structure of transport policy-making which 'has developed in a context of a process dedicated to the supply of new infrastructure'.

In addition to infrastructure improvements, the main focus of Council policy to promote modal shifts has been on the provision of information about travel choices (CCC 1998: 88). For example, the *Safe Routes to School* programme[5] seeks to make improvements to road design as well as provide encouragement for the use of alternative modes of transport (CCC 1998: 72–73). The Council has also introduced the *Travelwise* campaign, which aims to provide information about travel choices to the public (CCC 1997: 53), and the *Travel for Work* initiative, which has a broad remit to promote alternative modes of transport through behavioural and institutional change within workplaces, primarily through the introduction of travel plans. While such persuasive and soft demand management measures have received support, the provision of infrastructure remains central to transport planning within Cambridgeshire. This approach has been reinforced by recent government guidance which stresses that targets and performance indicators, which are readily measurable and for which the local authority can be held to account, should be included within local transport plans. In this context, soft and persuasive approaches to demand management, which are less straightforward to account for, may be neglected. This raises a contradiction for local authorities because, despite the rhetorical emphasis on the need to achieve modal shift, there is little evidence that the provision of infrastructure and information alone can deliver such a goal (Weaver 2001; see also Blake 1999). In turn, this suggests that other forms of demand management need to be included in any strategy which seeks to reduce the growth of traffic, and consequently, emissions of greenhouse gases.

A second approach to demand management which has been encouraged through national government policy is to reduce the need to travel through the integration of land-use and transport planning (DoE and DoT 1994; see also Chapters 5 and 9). A significant body of literature has emerged which seeks to test the impacts of different land-use patterns on transport demand and energy consumption (Banister 1992, 1997; Headicar and Curtis 1998; Kenworthy and Laube 1999; Owens 1992; Owens and Cowell 2002; Rickaby *et al.* 1992). Critics suggest that in the search for ideal models of development, the links between reducing physical distances and reducing the propensity to travel are all too easily confused. While it is clear that land-use and transport are related, there

are no simple models of causality which can be applied to policy problems (Headicar and Curtis 1998; Owens and Cowell 2002). It is hardly surprising therefore that, although the principle of the need to integrate land-use and transport planning has been accepted in Cambridgeshire, its definition and implementation have been problematic. During the 1990s, strategic planning documents advocated the dispersal of residential and economic development to the north and east of the county (CCC 1995b). In practice, this strategy conflicted with goals to reduce the need to travel within the county, in line with government guidance, as few employment opportunities were created in these peripheral areas, resulting in increased commuting to the Cambridge subregion. In recognition of this problem, and in response to changes in national PPG which emphasize that land-use planning should focus on the redevelopment of urban sites (Chapter 5), regional planning guidance now recommends that housing and economic development be located in the Cambridge subregion (GOEE 1999: 148). Furthermore, in line with government guidance, it is argued that such development should take place sequentially, starting within Cambridge, then considering building on parts of the greenbelt or creating a new settlement in the vicinity of the city, before considering further expansion of the nearby market towns.

In order to meet the government's figures for housing provision, 2,800 new homes per year would be needed in the Cambridge subregion, and unsurprisingly discussion of development in this order of magnitude has caused controversy. The new strategic plan for Cambridgeshire, at the draft stage, takes into account the principle of reducing the need to travel, by making provision for development within Cambridge, a review of the greenbelt and a new settlement five miles from the city at Longstanton/Oakington. However, a significant number of new houses are allocated to market towns and rural centres in the Cambridge subregion, leaving little question that traffic growth in the county is set to continue (CCC 2002). Moreover, doubts remain as to whether either building on the greenbelt or creating a new settlement will be politically viable, leaving open the possibility that rather than providing for housing sequentially, the (easier) option of continued development in market towns will continue. In any case, although there will be attempts to reduce the need to travel by car and to provide alternatives, there is little question that such large-scale development will lead to increased traffic levels. Furthermore, measures to reduce the *need* to travel are unlikely to be successful in the absence of measures to reduce the *inclination* to travel, such as those which provide information and alternatives or which impose additional costs on the use of the car. Land-use planning is a necessary but not sufficient instrument for addressing traffic growth, and perhaps one which can only be effective given conditions which make car travel less attractive (Owens 1995a, 1995b).

The third, and perhaps least controversial, element of demand management policies has been measures to impose physical restrictions on cars with regard to the city centre, through pedestrianization and limiting access to surrounding roads. In Cambridgeshire this has involved the development of the 'core scheme' in Cambridge, whereby rising bollards are used to restrict access to the city centre to non-essential traffic during the middle of the day, and the prioritization of pedestrians over cyclists in the centre of the city. Levels of car traffic entering the centre of the city fell by 12 per cent between 1988 and 1998 (CCC 2000c: 171), suggesting that the combined policy of restraining access and providing alternatives in the form of Park and Ride is at least removing traffic from this area of the county. Other attempts to reallocate road space away from cars to buses, cyclists and pedestrians have also been made, with the extension of bus priority lanes and

cycle paths, effectively aiming to manage demand by reducing the road space allocated to cars. However, such measures tend to be piecemeal, and fitted in around existing road infrastructure in places where an unacceptable level of disruption can be avoided. The extent to which they challenge the traditional priority afforded to car transport is therefore questionable.

In contrast, measures which have sought to manage demand through the use of market instruments – charges, tolls or taxes – have been controversial. The rationale behind such measures is twofold. First, that the external costs of car travel, such as accidents and pollution, should be incorporated into the costs of motoring so that individuals make choices on the basis of the 'true' costs of different modes of transport (Box 6.1). Second, that economic penalties can be effective in managing demand. During the 1990s the Council increased parking charges in the city of Cambridge, although this was undertaken primarily as a revenue-raising exercise for other schemes rather than as a means of deterring car travel. The Council was also the first local authority in the UK to pilot a system of congestion charging. However, the scheme failed to survive beyond the pilot phase because of a combination of technical problems and a lack of support, especially after the retirement of its political champion (Ison 1998). The issue of using economic instruments to manage demand has recently resurfaced with enabling legislation in the *Transport Act 2000* for local authorities to implement road user charging and workplace parking levies. In each case, the local authority is free to design and implement the scheme, and to collect any revenue raised, provided it is used to fund local transport improvements. However, government guidance makes it clear that, should a local authority wish to pursue its new powers, it will have to ensure that alternatives are in place first (DETR 2000f: 33).

**Box 6.1: Economic instruments in environmental policy**

In economic terms, environmental problems are thought to occur because market prices for goods do not reflect their environmental costs and benefits. These costs and benefits are known as 'externalities': they are external consequences of decisions taken by producers and consumers who do not have to pay for them. In the case of car use, these externalities include, for example, local air pollution, climate change and accidents. The purpose of economic instruments in environmental policy, such as taxes or subsidies, is to internalize these costs and benefits so that they are taken into account when producers and consumers make decisions. Examples of the use of economic instruments in the transport sector include fuel duty, differentiated rates of tax on cars with different engine sizes and congestion charging. However, rarely do such charges reflect the 'true' value of environmental costs and benefits (the calculation of which is fraught with practical and ethical problems). More often, these instruments are used to discourage unsustainable practices or to raise revenue for investment in alternatives. Problems which arise in the transport sector over the use of such instruments include the low elasticity of demand, so that low levels of taxation have little effect on behaviour, and concerns over the equity of levying equal taxes on rich and poor alike.

Given their previous experiences, the Council has decided not to consider road user charging at the present time, but has made a commitment to examine the possibility of introducing workplace parking levies in Cambridge. The Council is a member of the 'charging development partnership', established by the (then) Department for Environment, Transport and the Regions, for which it has been granted additional funding of £600,000 in order to undertake research (CCC 2000d: 2). Even at this early stage in the consideration of such a scheme, both practical and political problems have arisen. On the practical side, the first problem concerns the issues surrounding the implementation of a scheme, such as identifying parking spaces, setting the boundaries within which charges would apply, and securing long-term security for the scheme in the face of political changes at local and national levels. A second difficulty concerns the timing of the implementation of workplace parking levies. While central government, and many local authorities, have made it clear that alternatives have to be in place before such hard demand management measures are introduced, there is little evidence to suggest that the former will be successful without some form of disincentive for car use in place. The question also arises as to whether sufficient capital and revenue will be available to fund such alternatives without the promise of finance provided by workplace levies/road-user charging. The recent Ten Year Plan financial settlement for the transport sector has been generous to local authorities (DETR 2001b). However, concerns have been raised about the long-term future of such levels of funding, changes to local authority financing which will centralize funding and may lead to the neglect of spending on transport (CfIT 1999b) and the extent to which sufficient revenue will be available within local authorities to make the most out of their capital spending (Wootton and Marsden 2001). What is more, this generosity could reduce enthusiasm on the part of local authorities for workplace parking levies, one of the main benefits of which was seen to be the additional funding they would generate.

The contradiction of needing to have alternatives in place before implementing charging, but limited means to do this, and the questionable effectiveness of soft and persuasive demand management without hard measures in place, has been recognized within the Council. However, the perception is that workplace charging is currently 'too much, too soon'. This reflects the political problems with which the implementation of such a scheme is faced. Although in Cambridgeshire a political consensus over the need to manage demand, and the potential of economic instruments to this end, has emerged, cracks still appear along party lines about the acceptability of workplace charging. The opposition parties – Labour and the Liberal Democrats – need to secure rural seats to win a majority, and are reluctant to come out strongly in favour of workplace charging for fear of alienating the 'commuting' voter, although they still wish to address concerns over traffic levels expressed by those living in Cambridge. Meanwhile, the ruling Conservative party wishes to retain the loyalty of rural voters. Experience in Cambridgeshire confirms Enoch and Potter's (2000: 256) analysis that, in terms of local government's new powers to implement economic measures for demand management, 'signs of very cold feet are emerging from most town halls'. The implications for meeting central government targets for addressing the effects of traffic growth are considerable. The Ten Year Plan assumes that eight urban centres will have congestion charges and twelve will have workplace parking levies. Even if this were to be achieved it is not clear at what level these economic instruments are assumed to be set: the kind of level required to seriously deter car use, or the kind of level likely to generate the most revenue. Given this, the government's decision to stake so much on what local authorities can deliver could be considered unwise

(Bulkeley and Rayner 2002), and the chances of reducing emissions of greenhouse gases through local transport planning appear slim.

### *Meeting demands?*

While the demand management discourse of new realism has provided a powerful rationale for the development of local transport policy in Cambridgeshire, the discussion above illustrates that its implementation has been contested as policy-makers determine what demand management should mean in practice. Furthermore, alternative approaches which suggest that the provision of infrastructure to meet demand for private vehicles is a legitimate part of local transport planning have remained central. The recent allocation of funding under the Ten Year Plan (DETR 2000g, 2001b) indicates that significant expenditure is still being directed towards the provision of road infrastructure. In Cambridgeshire, the argument that improvements to the road network in parts of the county are needed has been explicit:

> Historically local investment in infrastructure has been an essential requirement to underpin economic success. This was true in the areas which previously relied on 'sunset' industries … it is no less true in the high technology future in which Cambridge is expected to lead the way. The Cambridge area has already experienced huge growth in employment and, consequently, similar growth in residential development and service industries. This growth is predicted to intensify. While all developments have contributed to new and expanded infrastructure, it has not kept pace with needs and there is now an 'infrastructure deficit' which threatens to clog the arteries of success.'
>
> CCC 2000b: 14

The tension between managing and meeting demand is evident in the response of the County Council to the mandatory requirement to set road traffic reduction targets, in line with the 1997 *Road Traffic Reduction Act*. While central government makes it clear that local government is free to set, or not to set, a target, each authority must prepare a report and explain their choice of targets. In their report, the Council argues that reducing traffic growth is not a strategy believed to be either desirable or possible:

> Cambridgeshire is experiencing two contrasting development pressures, neither of which makes the County obviously suitable for the two types of traffic reduction targets as identified under the Act. These types are an absolute reduction and a reduction in the rate of traffic growth. The positive development pressures on the Cambridge subregion would make even a reduction in the rate of growth an unrealistic target in many instances. For other parts of the County, much of which is underdeveloped fen land, there are policies in place aimed at encouraging development. Much of that development will have to be road based and, again for completely opposing reasons, setting traffic reduction targets is not realistic.
>
> CCC 2000d: xxv

In the light of this assessment, the Council proposes various targets which aim to stabilize traffic volumes in Cambridge and its surrounding area and the market towns, and to reduce traffic in the city centre by 1.3 per cent per year over the next five years, while

allowing for continued traffic growth in the rest of the county, reflecting current trends across Cambridgeshire. In order to reach these targets whilst also accommodating the 'desire or need for travel that always appears to accompany economic growth', the Council suggests that an increased modal shift away from the car will be needed (CCC 2000c: xxvi). These choices of road traffic reduction targets reflect government guidance that targets should not be 'aspirational', should be tied to measures implemented by the local authority, and should be measurable (DETR 2000f: 83).

This response is also symptomatic of recent shifts in thinking by central government, away from the goal of reducing traffic growth to reducing the impacts of traffic (CfIT 1999a; DETR 2000h). Underlying both local and national policy is the assumption that traffic growth and economic growth are inextricably linked. While recent research challenges such assumptions, suggesting that for any given rate of economic growth a variety of traffic levels is possible, this has yet to permeate policy thinking (Owens and Cowell 2002: 96–97). This approach to road traffic reduction raises significant questions about the impact of local transport policies on traffic growth, and the strength and efficacy of policies of demand management. Furthermore, the adoption of such targets suggests that the 'traffic problem' is considered to be localized. Although traffic reduction on commuter routes and in the city centre may reduce congestion and local air pollution, it will have little impact on reducing overall levels of traffic or rates of traffic growth, and therefore on the wider impacts of transport – including emissions of greenhouse gases and the consequent problem of climate change. This is implicitly acknowledged by policy-makers in the adoption of the target of reducing emissions of greenhouse gases by 12 per cent below 1990 levels by 2010 as an indicator of the success of their *Local Transport Plan*, rather than the more ambitious 30 per cent below 1990 levels by 2005 which remains an official target of the County Council (CCC 2000c: 176–177).

### *Transport, multilevel governance and climate protection*

Although the link between increased traffic growth and climate change has been explicitly recognized within Cambridgeshire, local action to reduce emissions of greenhouse gases from this sector has been limited. From the range of problems encountered in addressing this issue (Box 6.2), three key themes can be identified.The first relates to the powers and

**Box 6.2: Problems encountered in addressing climate change through local transport policy**

- Lack of direct powers to affect public transport provision
- Dependency on voluntary action by individuals and companies to achieve modal shift and demand management
- Lack of resources, in particular for non-capital projects
- Continuity of infrastructure provision approach – other measures receive lower-levels of support
- Need to 'account' for impact of measures – those with less direct or immediate effects are sidelined
- Practical and political problems in the implementation of new 'hard' demand management measures
- Assumption of a link between traffic growth and economic growth persists

resources of local authorities to affect demand management. Local government has limited powers to influence public transport provision or the use of different forms of transport. Furthermore, those soft and persuasive measures which have been introduced have been relatively poorly resourced, in part as a reflection of the nature of local transport funding which focuses on capital projects. A second, and related, theme is that demand management has focused either on providing infrastructure or information to persuade people to make different choices about their transportation. However, there is little evidence to suggest that such measures will be effective in isolation. This approach accords with a minimalist reading of new realism, where demand management is grafted on to traditional forms of transport planning while provision is also made for traffic growth (Bulkeley and Rayner 2002). Third, while the 'climate of desperation' (Vigar 2000) in Cambridgeshire may well have brought about a degree of rethinking about effective solutions to transport problems, the conceptualization of the problem has remained essentially static. In effect, the 'problem' remains framed in terms of how the growing levels of mobility, apparently deemed necessary to serve the goal of economic competitiveness – the Cambridge Phenomenon in this case – can best be facilitated, while at the same time reducing the most obvious local impacts of traffic. This interpretation of Cambridgeshire's transport problem has not only been shaped locally, through different interest groups promoting economic growth in the Cambridge subregion, but also by transnational corporations seeking to locate in the area, and by national government's assertion that Cambridge is a 'vital national asset' to the economy (Lord Sainsbury 2002; see also GOEE 1999: 151). In this context, the goal of reducing emissions of greenhouse gases across the county, articulated in various strategy documents, is overridden by concerns for economic growth and the local impacts of traffic. Together, these three themes illustrate that, as argued in Chapter 2, the governance of climate change is a complex, multilevel process.

The rationale behind the CCP programme is that it can increase the capacity of local authorities to address climate change. Given the lack of engagement between the Council and the CCP network, it is hardly surprising that the programme failed to make any impact in this complex policy area. However, the question arises as to whether the kinds of resources offered by the programme – advice on the calculation of emissions inventories and forecasts, and examples of best practice – could have been useful in this context. Recently, the Council commissioned an up-to-date inventory of greenhouse gas emissions, which will include estimates of the contribution of the transport sector to local emissions. This will enable the council to report on progress towards the performance indicator included within the Local Transport Plan , that of reducing greenhouse gas emissions. If the CCP programme had been adopted in full, including the creation of regular monitoring of emissions, this information would have been readily available. However, whether this would have, or could, make a difference to local transport planning is doubtful. Rather than knowledge being used to inform policy decisions, as 'truth' to 'power', the power to define the nature of the transport problem shapes which knowledge is seen as legitimate (Flyvbjerg 1998). In Cambridgeshire, the lack of action with respect to climate change in the development and implementation of transport policy has arisen because of limited powers to take direct action, a focus on soft or persuasive demand management and a lack of political will to use the hard demand management measures available; it does not stem from a lack of information or experience. This suggests that the conceptualization of capacity building and the techniques used to

promote it within the CCP programme fails to capture or address the challenges facing local governments. We return to these issues in the concluding chapters of this book.

## Conclusion

The issue of climate change has clearly become part of the rationale for policy development within Cambridgeshire County Council over the past decade. However, the role of the CCP programme in this process has been minimal. Although the programme itself has not been established within the administrative structures of the Council, various strategies developed at the time that the Council joined the programme mirror its milestone approach to addressing climate change locally. However, only the in-house *Energy Conservation Strategy* has met with any degree of success. Even if the CCP programme provided a model or impetus for the development of the *Carbon Dioxide Reduction Strategy* and the inclusion of targets to reduce greenhouse gas emissions within other strategies, the impact of these policies has not been assessed and evidence suggests that little action has been forthcoming. In part, the minimal impact of the CCP programme can be attributed to the lack of connections between the network and the local authority, so that those who had been involved with the CCP programme found that they could not access the resources that it provided. However, they also suggested that the programme was remote and politically disengaged from the context of local government in the UK, and did not tackle the challenges faced in addressing climate change within Cambridgeshire.

These challenges were evident in the case of local transport planning where, despite explicit recognition of the link between reducing traffic levels and climate protection, implementation of demand management measures to this end have been problematic. Although the focus of the CCP programme is on the provision of information to aid local decision-making, either through emissions inventories or examples of best practice, within Cambridgeshire it is not a lack of information about the impact of policy decisions on emissions of greenhouse gases that has been the main barrier to action. Instead, problems lie in the capacity of local government to affect emissions from the transport sector, the priority afforded to these considerations, and tensions between environmental and economic objectives. Rather than providing an issue through which renewed consensus over issues of urban sustainability can be forged, as suggested by the CCP programme (see Chapter 3), the local politics of climate change in the transport arena have been contested. Despite the relative influence that the Council might be able to wield over transport planning – given the 'climate of desperation' in the Cambridge subregion – our analysis suggests that radical solutions will not be forthcoming. While central government has made provision for the implementation of hard demand management measures, this has been undermined by the continued emphasis nationally and locally on the need to provide for traffic growth, and the particular balance of political power within the Council. This suggests that increasing local capacity to address climate change is not only a matter of giving local government additional powers with which to affect decisions towards that end, but also of engaging at local and national levels with the conflict between economic and environmental imperatives in such a way as to lend the latter legitimacy in the face of the former. In Cambridgeshire, the view prevails that the Cambridge Phenomenon must be nurtured, and that this inevitably means more traffic and housing demand within the county. This view has not only been promulgated by local government, but through spheres of authority which cross public and private sectors, and at

different levels of governance. In this context, and without the support of similar networks through which alternative discourses of development can be articulated, addressing climate change through measures or policies which might conflict with economic imperatives has not been possible. Without addressing such conflicts head on, few reductions of greenhouse gas emissions locally will be possible, and long-term national and international targets will be difficult to achieve.

# 7 Leicester

## Climate protection and the built environment

Leicester City Council has long been considered a front-runner in local environmental policy, and in this chapter we examine how the issue of climate protection has been interpreted and acted upon in policies for energy management in the built environment. Located in the East Midlands, Leicester is the tenth largest city in the UK (Figure 7.1). The city has a tradition of manufacturing industry, including the chemicals and clothing sectors, and has experienced problems of unemployment as these industries have declined. More recently, it has developed as a commercial and shopping centre for the region, in competition with the nearby cities of Nottingham and Derby and out-of-town shopping centres. In the first section, we outline the history of Leicester's involvement with energy management, and consider the impact of its membership of the CCP programme on local policy development. We then turn to the built environment. Improving the energy efficiency of the housing sector in the UK has been seen as a key means through which to act on climate change, while simultaneously addressing the issue of fuel poverty. We outline the background to these debates, and examine Leicester's strategies for increasing the energy efficiency of buildings and changing individual behaviour in order to reduce energy use, as well as in-house initiatives taken to address the Council's energy consumption. We argue that, despite the relative success of Leicester's strategies for energy efficiency in the housing sector and its in-house initiatives, progress has been piecemeal and limited by dependence on external sources of funding and limited powers of local authorities to affect energy efficiency or energy conservation within the domestic sector. In conclusion, we reflect on the implications of these findings for understanding how the governance of global environmental issues takes place.

### Local energy management and transnational networks

Leicester City Council has a long history of involvement with local energy management. For example, in the 1970s, solar energy collectors were installed at a local swimming pool, and council housing was built to take advantage of passive solar gain. In the 1980s, the Council was designated as a lead city for the development of CHP. However, the intended city-wide CHP was never implemented, primarily because, although viewed as technically feasible, it did not prove to be economically attractive. Despite this, several small-scale CHP and district heating schemes have been established in the city, both by the council and by private companies (LCC 1994). Also during this period, energy efficiency measures, such as improving insulation, were undertaken for council housing stock. In 1986, a demonstration Eco-House incorporating solar energy and energy conservation measures was built in Leicester. These initiatives were developed and supported by

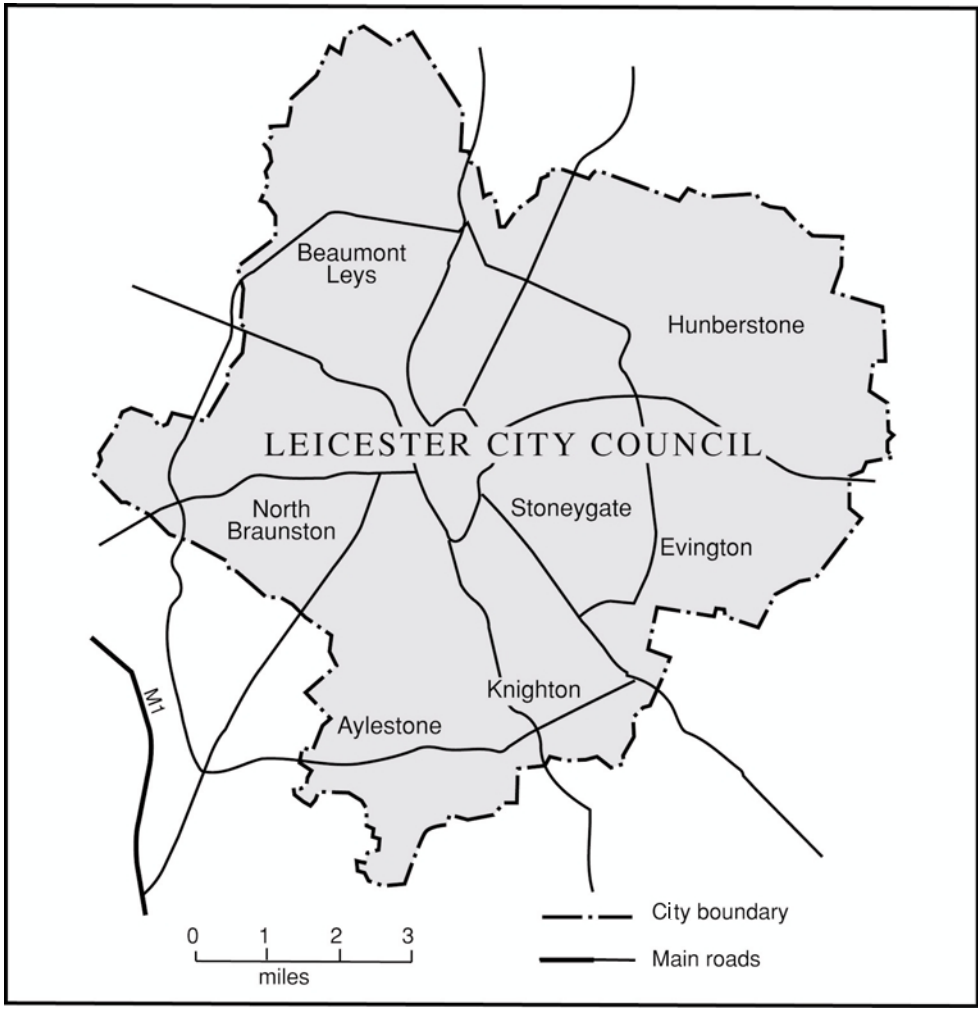


*Figure 7.1* Map of Leicester City Council

working parties of council members on energy efficiency and on CHP, ensuring that they had political support. Since the 1970s, the Council has also been concerned with developing open space within the city, and enhancing habitats for urban wildlife.

In recognition of these initiatives, Leicester was designated the first Environment City[1] within the UK in 1990, with the remit to deliver 'sustainable development in the confines of a working city' (Newby and Bell 1996: 101). The Environment City project gained European support through funding from the LIFE[2] programme (Newby and Bell 1996: 101), and over the past decade the Council and its partners have attracted considerable funding for energy and environmental initiatives from other European funding sources. Leicester was also recognized at the Rio Conference, as one of only twelve cities to be given an award for initiatives to address local sustainability. In a climate of growing interest in the potential of local action to address environmental issues, Leicester became known internationally for its pioneering work (Roberts 2000; LCC 1994). In turn, this

gave the Council contact with international networks of local governments which were addressing environment and energy issues, and Leicester joined energie-cités[3] and ICLEI. The kudos bought by European funding and international awards meant that there was strong political support for the Council to consider the global dimensions of local problems, and to actively engage with transnational networks. Joining the CCP programme fitted with this ethos, and was a means for local politicians who were keen for personal involvement in ICLEI to show their commitment to the organization.

As described in Chapter 3, under the CCP programme participants are encouraged to undertake a number of milestones in developing a local climate change strategy, including creating an inventory and forecast for emissions of carbon dioxide within their area, setting a goal for reducing emissions, preparing an action plan and implementing measures. In Leicester these steps were undertaken before the Council joined the CCP programme. In the wake of the Environment City designation, eight specialist working groups to address various aspects of local sustainability were established. One of the working groups was dedicated to exploring how energy efficiency and reductions in emissions of carbon dioxide could be achieved within the city, and in 1990 an *Energy Action Plan* was launched. This set Leicester the ambitious target of reducing 'the consumption of non renewable sources of energy and carbon dioxide emissions to half of the 1990 levels by 2025' (LCC 1996: 12), and suggested 80 actions which could be taken to this end. Through the energy working group, and with funding from the European directorate for energy, the *Leicester Energy Strategy* was then developed.

The Strategy formed part of Leicester's LA21 process, and assessed the measures already taken and those which would need to be taken in order to meet the above target. This assessment was made in terms of energy supply and energy demand in the domestic, business, community and transport sectors (LCC 1994). It was based on data concerning population, housing, industry and journeys undertaken in Leicester, gathered and produced by the DREAM energy model, developed by the Open University and De Montfort University in partnership with council officers in Leicester. This approach to energy management has clear parallels with the CCP programme, where emphasis is placed on monitoring and modelling energy flows in the belief that such information can act as a spur to action. Indeed, the compatibility between strategies developed in Leicester and the CCP programme goes someway towards explaining the involvement of the Council with the network. However, as suggested in Chapter 2, such an approach to urban sustainability, which emphasizes rational processes of policy change and the bounded nature of localities, is problematic, and we consider its implications for climate protection in Leicester throughout this chapter.

Rather than providing the basis for building local capacity to address climate change, in Leicester the CCP programme has served as a means to highlight the strategies which have been developed and the actions already being taken. However, along with other transnational networks, the programme has provided access to European funding, or partners among whom such funding could be sought, to take forward particular projects. In addition, it has drawn attention to the wider importance of local initiatives, and has enabled individuals within the Council to build on Leicester's international reputation and gather more local support for action:

*R:* What … ICLEI provides through its programmes, [is] the opportunity for local authorities to realize that this is actually happening not just in the UK, but it's happening in Europe and it's happening globally. And I think that … is actually

> very powerful, I think that is one of the reasons why we are still a member of ICLEI. … I think particularly … with our old set of politicians, that they could see the sense in that, that they were part of this global [effort].
>
> Interview, Environment Officer, Leicester City Council, 2000[4]

Recently there has been renewed interest in the CCP programme within the Council. In 2000, after over a year of lobbying, ICLEI persuaded the UK Government to pilot a new version of the CCP programme in the UK, as the *Councils for Climate Protection* programme (see Chapter 3). Leicester is taking part in this pilot scheme, interested in the potential offered by the ICLEI software to create a certified 'carbon trail' through which local governments could become involved in trading carbon savings in the future. Despite the development of software tools, there remain significant barriers to creating an accurate energy and carbon dioxide model at the local level, not least of which is the issue of data availability. In the UK data on energy use at the household level is held by utility companies, while energy use from mobile sources is difficult to calculate for local government areas. The UK is not alone in experiencing this problem. In their study of global change in local places in the US, Kates and colleagues found that, 'surprisingly, moving downscale makes data more difficult to obtain than at higher levels of aggregation. Data are either not collected by public or private sources, are withheld as proprietary or made available only at great expense and, when available, do not match the area under study and must be allocated to it with much difficulty' (Kates *et al.* 1998: 286).

In addition to the problem of missing data, there is the question of how emissions are to be allocated – to the area in which they are produced, or to that in which they are consumed? This seemingly technical point has profound implications for the distribution of costs and benefits associated with addressing climate change. While the *Councils for Climate Protection* programme offers local authorities a computer tool to assist with the calculation of local inventories and forecasts, it has yet to address the more deep-seated issues of data availability, applicability and allocation. Moreover, there is the danger that the quest for accurate data will swamp local authority officers, and detract from the task of reducing emissions of greenhouse gases. While ICLEI suggest that the milestones approach does not necessarily imply a linear policy process, in which emissions inventories and forecasts are completed before targets and action plans are adopted in order to focus local policy on particular problems, it is difficult to escape its linear logic. The alternative rationale – that modelling and monitoring energy flows is a means of tracking the progress of policy initiatives and enhancing local accountability – will depend on the use of more accurate data than that currently available.

Furthermore, the development of local policy initiatives on energy and climate change in Leicester has not been the direct result of local energy modelling or increased knowledge about local emissions of greenhouse gases. This raises doubts about the effectiveness of strategies for capacity building, as advocated by the CCP programme, which are based on information collection and dissemination. In Leicester, climate change policy has been shaped by the commitment of individuals, national and international recognition, access to external funding and political support across the authority. A degree of continuity in support among officers and politicians, and in broader communities of interest, involving universities and NGOs, and Leicester's success in securing European funds, have meant that connections between the CCP network and the Council have remained open. However, reliance on the commitment of certain individual champions, external funding and voluntary action on the part of local government and its partners has meant that the

CCP programme, and action on energy and environmental issues more broadly, has been vulnerable to political and budget changes:

> *R:* … a lot of local authorities now ask the question, well, what am I … [paying] ICLEI and energie-cités for? … We aren't actually paid any money for the energy services on the council side. It's all done by charities and [other sources of funding]. … Now, that income source is not to cover me joining, you know, energie-cités. It's for me to do a job for that department … they can't afford to waste money, nobody can. And therefore everybody is shutting accounts and trimming round the edges, getting rid of dead wood … [so they ask] why are we paying this out to energie-cités? I say, well, it's all these projects you've had through Europe, you know, how they've found partners for us, and everything else. Look at the money it's brought us. … Yes, but how many jobs has that created? And I have to go and argue and sort of fight. … It really is difficult now.
>
> Interview, Energy manager, Leicester City Council/Leicester Energy Agency, 2000

While policies and measures for managing energy use and reducing emissions of greenhouse gases have been continually developed over the past decade in Leicester, this process has not been smooth or predictable, and has instead been shaped by influences and opportunities at multiple levels of authority. In the next section, we examine these processes in more depth, focusing on energy management in the built environment, in particular on the existing housing stock and in-house measures taken by the City Council.

## Climate protection, housing and local government

During the 1990s, the need to improve the energy efficiency of the housing stock in order to address issues of climate change and fuel poverty was recognized by national and local government. In this section, we outline the background to these debates and the measures which have been taken nationally and locally to address energy use in the housing sector, and we examine how Leicester City Council has sought to address its own energy use. We then assess the progress which has been made, as well as the conflicts and constraints which have been encountered, in addressing climate protection in the built environment.

### *Managing energy in the domestic sector*

Traditionally, the energy sector in the UK has been dominated by a logic of supply-side management, in which the provision of infrastructure, to meet demand and increase connectivity within the national grid, was prioritized (Guy and Marvin 1998). Within this approach, 'there has been an overwhelming institutional concern within the corridors of power (politically and thermodynamically) for factors of energy production, while factors of energy consumption have received markedly reduced status or commitment' (Sheldrick and Macgill 1984: 47). Although energy conservation became an important national issue during the 1970s, as a means to address the oil crisis and secure energy supplies, it has remained peripheral to the main thrust of policy in the energy sector – increasing network capacity and reducing costs. Likewise, concern for the development of alternatives to coal-fired electricity and gas was restricted to nuclear power and, more recently, gas-fired electricity. This nationalized and centralized approach to energy provision was challenged

during the 1970s and 1980s by local concerns over specific issues, such as the siting of nuclear power stations, and alternative approaches to energy supply and conservation. Despite a lack of statutory powers to address energy locally, many local authorities, including Leicester, piloted CHP and district heating schemes, and undertook various measures to address energy conservation in council buildings and housing stock (Guy and Marvin 1998; Sheldrick and Macgill 1984, 1988). These initiatives were supported by government grants, but were also driven by the concerns of local authorities regarding fuel poverty and housing quality (see Box 7.1). This period of local action on energy management did not last long. As local government was reorganized, funding cut and the energy sector privatized in the late 1980s, many schemes were abandoned.

**Box 7.1: Fuel poverty**

Boardman (1991) defines fuel poverty as the inability to afford adequate warmth because of the energy inefficiency of the home. Adequate warmth is seen as the ability to heat two rooms, a kitchen and a bathroom in the home to 18–21°C for 13 hours during the day, and to maintain a night-time temperature of 14°C. This is seen as 'affordable' when it costs no more than 10 per cent of the income of the poor (those relying for 75 per cent of their income on the state).

In Leicester, as we described above, the Environment City designation and the creation of a working group on energy, together with committed individuals and Leicester's international connections, sustained interest in local energy management. In 1993, the Council produced a *Home Energy Strategy* for managing energy use in the domestic sector. In the 1990s, increasing attention was paid to this arena of energy management. In part, this was a result of growing interest in the concept of 'sustainable cities', and the development of LA21 (see Chapter 2), which led to European funding for urban energy studies and a growing interest in the connections between land-use planning and energy use (Guy and Marvin 2001). It was also a reflection of a resurgent interest in energy management at the national level, driven by concerns about climate change. The UK's White Paper on sustainable development, *This Common Inheritance* (DoE 1990), highlighted the importance of domestic energy conservation (Anderson 1993: 50; Bhatti 1996). Energy use in the domestic sector is thought to contribute over 40 per cent of the UK's carbon dioxide emissions (DETR 2000a), and reducing these emissions has been regarded as a key element in national climate change policy over the past decade. To this end, various policies and measures, including changes to building regulations,[5] schemes to improve the energy efficiency of existing housing stock, and attempts to change the behaviour of individuals, have been initiated (Table 7.1).

In addition, Guy and Marvin (1998) suggest that a new logic of network management is emerging amongst the private utilities, in which demand-side management is seen as a strategy through which they can avoid costly investment in new network capacity, though whether this challenges a continued presumption in favour of increasing levels of energy use is debatable. With the introduction of the *Home Energy Conservation Act* (HECA) in 1995, the role of local authorities in domestic energy management gained statutory weight. Under HECA, local authorities are obliged to produce a report detailing practicable and cost-effective energy efficiency improvements across the housing stock in their

*Table 7.1* National policy initiatives to address domestic energy use in the UK

| *Policy* | *Description* |
|---|---|
| *Aim: Improve energy efficiency of new buildings* | |
| Building Regulations | Define requirements for energy-efficient lighting, space and water heating systems, as well as the thermal efficiency of walls, floors and roofs in new buildings. Critics suggest that trade-offs between different energy efficiency measures reduce the potential for energy conservation, and that in reality their contribution to energy saving is less than predicted. |
| *Aim: Improve energy efficiency of existing housing* | |
| Housing Investment Programme (HIP) | Provides grants for improvements to public sector housing, with local authorities expected to source 40 per cent of the finances from local funding. Despite the inclusion of mandatory energy efficiency criteria within HIP funding bids since the mid-1990s, the decline of central government support for projects has meant that funding is targeted at housing in the worst condition, which 'soaks up funds more rapidly and often to less effect, at least from an energy efficiency point of view' (Guy and Shove 2000: 102). |
| (New) Home Energy Efficiency Scheme (HEES) | Grants available for those on state benefits or pensions for energy efficiency measures, such as loft insulation or draft proofing. Under the New HEES programme, introduced by the Labour government in 2000, funding has been increased and the focus shifted to packages of energy efficiency measures rather than one-off improvements. |
| Energy Efficiency Standards of Performance scheme (EESoP) | Under this scheme, electricity suppliers raised a levy of £1 per customer to be spent on energy efficiency programmes by the Energy Savings Trust. |
| Energy Efficiency Commitments scheme | In 2002, this will replace EESoP and will require 'suppliers to deliver energy efficiency projects reducing sector emissions by approximately 0.5 annually' (Eyre 2001: 321). |
| *Aim: Promote behavioural change to reduce the use of energy* | |
| VAT on domestic fuel | This was introduced initially in 1994 at the rate of 8 per cent, due to rise to 17.5 per cent by 1995. Originally cast as an environmental measure, it met with much political opposition because of its potential impacts on the fuel poor and the proposed 17.5 per cent level was never implemented. Under the Labour government, it was reduced to 5 per cent. |
| Minimum performance standards and energy efficiency labelling of domestic appliances | As a result of EU requirements, some domestic appliances now meet minimum standards and carry energy efficiency ratings (RCEP 2000: 103) in order that consumers can make better choices about their consumption of energy. |
| Public information campaigns | Energy awareness campaigns have attempted to raise the potential monetary savings and environmental benefits of energy efficiency in order to promote action by individuals. These include the 1991 Helping the Earth begins at Home campaign, publicity undertaken by the Energy Savings Trust, as well as the Are You Doing Your Bit? Campaign which, while aimed at action on sustainable development in general, includes the promotion of energy efficiency in the domestic environment |

*Note*: The information in this table is drawn from: Bhatti 1996; DETR 2000a; DTLR 2002; Eyre 2001; Guy and Shove 2000; Hinchliffe 1996, 1997; Jones and Leach 2000; McEvoy *et al.* 1999; RCEP 2000.

area, and to work towards the target of reducing emissions of carbon dioxide from the housing sector by 30 per cent of 1990 levels by 2005 (Jones and Leach 2000). Whereas the energy management undertaken in the 1970s and 1980s was a result of the voluntary action of concerned local authorities, HECA made it a statutory requirement that local authorities (those which are energy conservation authorities) at least acknowledge the issues of energy conservation in the housing stock in their local area. However, 'while there is a duty on all authorities to submit an annual progress report on HECA, there is in fact no legal duty to make any progress towards the target' (Jones and Leach 2000: 72). Undertaking the reporting task has been onerous for many authorities, due to the lack of available data on energy use in the domestic sector. Furthermore, little additional funding has been made available to implement the measures suggested in the HECA strategies, and that which is available is allocated on the basis of competition between authorities. While the intention behind HECA was to improve the energy efficiency of housing across local authorities, evidence to date suggests that it has been those authorities with a history of interest and action in this sector which have continued to be the most active, and which have benefited most from the additional funding available (Jones and Leach 2000; McEvoy *et al.* 2001). Leicester is one such local authority, and in the next section we examine how energy management has been conceived and pursued within the domestic sector.

### *Home energy efficiency in Leicester*

In Leicester, the approach to domestic energy management developed in the *Home Energy Strategy*, and built upon through the *Leicester Energy Strategy* and requirements under HECA, have focused on two areas. First, measures which address the energy efficiency of the existing housing stock and, second, initiatives to change the behaviour of individuals in order to reduce their energy use. Here, we discuss each in turn.

Within its public sector housing, the Council has implemented a number of energy efficiency measures such as cavity wall insulation and top-up loft insulation, the distribution of low energy light bulbs, replacement of over 1,000 boilers with energy efficient models, and the renovation of houses to improve their energy efficiency (LCC 1999). There is some indication that these measures have been effective. For example, over the period 1997–1998, it has been calculated that an approximate 2 per cent energy efficiency improvement was made to public sector housing stock in Leicester (LCC 1999). Within the private sector, two approaches have been developed. The first has been to encourage recipients of home renovation grants to take energy efficiency measures while conducting renovations through the provision of additional grant aid (LCC 1994: 19). The second has focused on improving energy efficiency in areas of the city which have received specific regeneration funding from central government, through both the *City Challenge* and *Single Regeneration Budget* programmes (LCC 1994: 19–20, 1999). This has bought both benefits and problems to those working in this area:

> *R:* We've been quite opportunistic, and we've tapped into programmes when we can, so that when *City Challenge* came along, we were able to bring [energy efficiency] into that area, equally when [*Single Regeneration Budget*] comes along, we can put things into that, so basically when we've got an opportunity to grab resources and do that work, we take that opportunity [but] … its dictated by other pots of money.
>
> Interview, Environment Officer, Leicester City Council 2000

On the one hand, energy is an issue which can be addressed through linkages with other schemes, from health issues to regeneration. However, making links with other programmes takes a considerable amount of effort, and there is a lack of continuity in funding and therefore ability to take action, and the energy aspects of programmes which are focused on other goals can be sidelined. Furthermore, not all objectives for energy policy are necessarily compatible. For example, the goals of reducing fuel poverty (essentially a matter of improving the efficiency of energy use), and of reducing energy use do not always coincide. If a fuel-poor household is insulated, research suggests that rather than use less energy, the householder will use the same amount of energy to achieve a higher standard of warmth and services (Clinch and Healy 2001: 116). While this is a laudable goal from the point of view of social inclusion and reducing health problems, it does not fit with attempts to reduce emissions of greenhouse gases, though addressing fuel poverty may be a necessary step towards achieving energy conservation. This is not to say that concerns for climate protection should override those for fuel poverty, but to point to possible contradictions within the energy policy agenda.

Information provision has also been a key element of Leicester's domestic energy strategy. This has been undertaken in several ways. In 1993, an independent energy advice centre and energy management group was established with funding from the City Council and the Energy Savings Trust (LCC 1994: 23). In 1996, this organization received a further three-year grant from the European Commission to establish an Energy Agency. The advice centre and Energy Agency provide information and energy efficiency goods to the public through their shop in Leicester city centre, and provide data for the Council on the uptake of energy efficiency measures by residents. Using European funding they also provide advice for local small and medium-sized businesses, and for other energy agencies around the country. The City Council's housing department, with assistance from the EU SAVE programme (Haigh 1996), has developed the *Energy Sense* programme (Box 7.2) to promote energy conservation among the 'fuel rich':

*R:* *Energy Sense* … tries to look at reasons why people don't invest in energy efficiency, what the obstacles are, and then [tries to] combat those. So we felt that people initially were perhaps not informed about what they could be doing to [address] energy efficiency. So we pop these [leaflets] in people's homes, and indicate what could be done … and … give illustrations of paybacks. We felt that people weren't aware of what products were available, so we try and bring that in … and we have developed a schedule of rates, with contractors that are prepared to install energy-efficient goods, and that are reliable, because it then combats people's fear of employing builders. And we've negotiated discounts with manufacturers and installers. … We can say to people … you can install 150 mm more loft insulation to top it up to 200 mm, and it will cost you X. And we can guarantee them delivery for that price, because we have contractors that have agreed to scheduled rates for standard house types.

Interview, Housing Officer, Leicester City Council, 2000

On one level, the programme provides individuals with information to promote voluntary action, and gives access to a range of discounted services. Perhaps the most interesting element of the programme, however, is the provision of a home energy conser-

vation service. By providing guarantees about the price and quality of energy efficiency measures, and by overseeing the work and payment of contractors on behalf of the householder, this element of the *Energy Sense* programme tries to reduce the 'hassle factor' associated with home improvements. This package approach to the provision of advice and implementation of energy efficiency measures is regarded as more successful than the provision of advice in isolation (Guy and Martin 1998; McEvoy *et al.* 2001). However, in the main, finances for the implementation of measures still have to be raised through conventional means by the householder. The effectiveness of information campaigns, which implicitly assume that it is a lack of knowledge which is the barrier to individual action, has been questioned. Rather than being a problem of awareness, the lack of action on the part of individuals with respect to energy efficiency and climate change could be seen as a reflection of feelings of the inadequacy of individual action and a lack of trust in other people and institutions to take action in kind (Blake 1999; Bulkeley 2000b; Hinchliffe 1996, 1997). While the *Energy Sense* programme emphasizes the provision of information, technical solutions and action on the part of individuals, it moves towards a recognition that the barriers to the implementation of technically proven energy efficient measures are as much social and institutional as informational.

**Box 7.2: The *Energy Sense* programme**

The *Energy Sense* programme works on a number of levels, by providing information about the possibilities of energy conservation and by addressing the 'hassle factor' which people associate with building works. This approach addresses the criticism of recent research that providing information alone is unlikely to create behavioral change.

- An information pack on possible energy conservation measures and their economic and environmental paybacks is given to residents
- A free home energy survey and schedule of proposed works, with their costs, is available to individual households
- Recommendations on contractors and energy efficient products
- Negotiated rates from local contractors and guarantees for the supervision and completion of the work are available to residents
- A free 'home energy smart card' provides incentives for purchasing energy efficient goods and services
- Some grants are available to assist in the implementation of the alterations, but in the main finances have to be raised by the individual householder

### *In-house energy efficiency*

This strategy, of emphasizing the potential of technical solutions and the need to provide information in order to affect behavioural change, has also dominated the approach to energy management within the Council. However, the administrative barriers to implementing energy efficiency measures, such as the need for capital through which to implement measures, which in turn accrue financial savings, have also been recognized. In the wake of

the *Energy Action Programme*, the *Energy Strategy* and the formation of the Energy Agency, the Council and energy management team have conducted a number of initiatives to address the issue of energy use within their own buildings. These have included the installation of automatic switches for lighting, new heating systems, the provision of energy efficient appliances, the installation of a solar hot water system in the main Council offices, procedures to ensure that contractors comply with energy efficiency requirements and the continuing provision of advice to Council staff on the use of energy (LCC 1994, 1999). This last measure was seen as particularly important by the head of the energy management team:

*R:* At the [Council offices] … [there are] kitchen areas where you can go and get your coffee and everything. And those boilers have been made energy efficient. … OK, so you go there, and you take your cup, and you fill it up. Or you take your vacuum flask and fill it up. You see, they don't. They take their kettles along there … and they go back to their office. … You get kettles all round the building … and little coffee percolators … and then you see microwaves turning up, and fridges. … So it's a continual battle … you have to get controls set right, and educate people. … You can't do it once and walk away.

Interview, Energy Manager, Leicester City Council/Leicester Energy Agency, 2000

The development of an Environmental Management and Audit Scheme (EMAS) within the Council over the past four years has lent further weight to this approach to in-house energy management. The rationale for adopting EMAS relates both to a long-standing political commitment to corporate environmental responsibility, developed through Environment City and the LA21 process, and to the local government modernization agenda of the Labour government. As outlined in Chapter 4, councils are required to illustrate how their services and operations provide *Best Value* for various indicators, including meeting sustainable development criteria. The EMAS approach provides an audit of how the Council is delivering local sustainability for particular issues and indicators. In Leicester, this includes both 'the council's use of energy and fuel [and] Leicester's use of energy and fuel' (LCC 1999). However, the objectives and targets for action on the part of the Council are selected with respect to the severity and amount of pollution, and the influence the Council can have over the process concerned. As a result, the objectives and targets relating to energy are restricted to in-house actions (Table 7.2), although initiatives relating to energy use in the built environment outside the Council's operations are also recorded (LCC 1999).

The goal of reducing energy use and emissions of carbon dioxide was first mooted in the *Energy Action Plan* as a target of 50 per cent of 1990 levels by 2025, reiterated within the *Energy Strategy* and revised in the LA21 document, *A Blueprint for Leicester*, to include a 20 per cent target for renewable energy supplies. Under EMAS this has been changed to a reduction by 50 per cent of energy use within council buildings by 2025 compared to 1990 levels, and 20 per cent renewable energy supply for council operations. Against each target are *action programmes* which are assigned to departments and individuals across the Council. Arguably, EMAS has helped to give a more transparent and rigorous means of assessing progress towards such targets, as well as to raise the profile of energy issues within the Council. However, despite its best intentions, the EMAS process has faced some considerable hurdles, not least in addressing the use of energy within buildings formerly controlled solely by the Council, such as schools and hospitals. Here the contradictions between different central and local government policies become all too

*Table 7.2* Objectives and targets for energy management in Leicester City Council

| *Objectives* | *Targets* |
|---|---|
| Reduce the council's total building energy consumption | Reduce to 50% of the 1990 level by 2025 |
| Improve the energy rating of council houses | From 47% of council houses achieving less than 6% (National Home Energy Rating) in 1997 (March) to all council houses achieving 6% (NHER) by 2006 |
| Increase the council's use of renewable energy | From 0% of the energy requirement of council buildings in 1997 (March), to 20% of the energy requirement of all buildings by 2020 |
| Reduce staff commuting by car | A 10% reduction in the number of people coming to work by car in 1997 by 2000 |
| Reduce the fuel used by staff vehicles at work (not commuting) | A 5% reduction of the fuel used in 1997 by 2000 |
| Increase the use of bicycles at work (not commuting) | A 100% increase of 1997 levels by 2000 and a 200% increase in 1997 levels by 2002 |

*Source*: *LCC 1999*.

apparent. On the one hand, central government is directing local authorities to consider the environmental impacts of their service delivery and policy goals through *Best Value*. On the other hand, successive waves of reform to local government have decentralized management of property and services. This means that the benefits of scale in investing in energy efficiency measures are lost, and the council has little influence over energy management decisions in public services. Furthermore, new guidelines for benchmarking and comparing service delivery seem to neglect the sustainable development aspect written into *Best Value* in favour of more crude measures which focus on cost. Whether the Council can meet its internal EMAS targets for energy in this climate is unclear. Furthermore, questions remain as to whether such targets will detract from the more holistic and comprehensive approach taken to energy in the early part of the 1990s, by focusing attention on that which can be controlled by local government rather than those areas in which it has more indirect influence but which may be more significant.

### *Climate protection and the built environment*

The Council's energy management strategy has focused on the improvement of energy efficiency within the domestic sector and its own buildings through the installation of technologies and the provision of advice. There are several factors which account for Leicester's relative success in these areas. First, key officers, members and other actors, who have remained within the Council or within local communities of interest, have supported local strategies which take a holistic and comprehensive approach to energy management. Second, officers working in the energy sector have managed to ally their concerns with other agendas, such as social inclusion (fuel poverty), health, regeneration and business efficiency in order to pursue the energy agenda. Third, and a related point, the council has gained access to additional funding sources: financial arrangements which allow the savings from energy efficiency to be reinvested; local government initiatives, such as the housing renewal programme; central government funds, such as *City*

*Challenge*, the *Single Regeneration Budget*, and the Energy Savings Trust; and European Commission programmes. This has enabled the Council to undertake measures to address energy issues over and above those which they would have been able to do within normal funding arrangements. Fourth, the designation of Leicester as an Environment City and their success with energy and environmental initiatives has been recognized internationally, which in turn gives the City Council a reputation to live up to and strengthens local political support for initiatives:

> We didn't enter the awards [for any other reason] than to raise the profile and keep elective members, team officers, happy, you know. As long as we are being successful and we are picking up awards, it's good kudos, you know. … Then they'll leave you alone. Otherwise they start to cut your team down.
>
> Interview, Energy Manager, Leicester City Council/Leicester Energy Agency 2000

Finally, given these factors, Leicester City Council has been able to take advantage of changes in government legislation, such as HECA and Best Value, to strengthen the legitimacy of their energy and environment policies by giving them significant weight within the local authority. This illustrates the multilevel nature of the local governance of climate change, constituted and constructed by state and non-state actors at transnational, European, national and local levels.

Even given the relative success of Leicester in addressing energy issues within the urban environment, it is not clear how far they have progressed towards achieving the target of reducing energy consumption and carbon dioxide emissions by 50 per cent of 1990 levels by 2025. In a review conducted under EMAS, progress over the year 1997–1998 was seen to have had led to a more than 1 per cent improvement in energy efficiency and a greater than 1 per cent reduction in carbon dioxide emissions as a result of measures identified and declared under HECA (LCC 1999). More broadly, an estimate made by the Energy Agency indicates that energy management policies could be reducing the rise in energy use per year by 50 per cent against a 'business-as-usual' scenario (LEA 1999). While these are no mean achievements, they suggest that even for a proactive local authority, conserving energy in the built environment is difficult, and brings into question the likelihood of achieving the targets espoused under HECA or the *Energy Action Plan*.

In interpreting and implementing climate protection within the built environment in Leicester, several problems have been encountered (Box 7.3). First, the development and implementation of policies and measures has relied in large part on the commitment of individuals. While a degree of continuity has been maintained within the local authority, the priority afforded to energy and climate protection has been subject to change with the ups and downs of local politics. Second, the reliance on external funding makes the future of any initiatives uncertain, and requires considerable amounts of officer time to secure. One criticism frequently levelled at central government with regard to HECA is that few additional funds have been made available for local authorities to achieve these targets (Jones and Leach 2000). The *Energy Sense* scheme, the energy advice centre, the Energy Agency and previous initiatives have been dependent on significant external funding sources, such as those from the EU or from other government schemes, for example the *Single Regeneration Budget*, for which energy efficiency was not seen as a priority. This funding is unlikely to be sustainable as many grants are given specifically for the purpose of creating

**Box 7.3: Constraints encountered in addressing climate change in the built environment**

- Dependence for knowledge and interest in energy as an issue on a few individuals
- Lack of power to influence energy efficiency/use across council departments
- Focus on in-house measures which produce cost savings in the (relatively) short-term
- Reliance on external funding to develop and implement measures
- Lack of resources to implement energy efficiency measures within the housing sector
- Lack of influence over energy efficiency improvements within the private housing sector
- Lack of influence over energy use across all housing sectors
- Competition between departments to deliver similar services, in particular energy efficiency advice
- Contradictions between different Council objectives

'demonstration' projects, rather than for pursuing tried and tested means of achieving energy efficiency. As Guy and Shove (2000: 103) suggest, as a result of the reduction in strategic funding and the rise of competitive bidding 'planned programmes are giving way to targeted bursts of "emergency" maintenance initiatives, or sudden flurries of action following a windfall of competitive success'. Third, the various parts of the authority and other related bodies may be duplicating effort:

> Now, the thing about Leicester is, it's very competitive. We've got the Housing Department … they'll have their own energy [strategy]. We've got Environs, which is a … charity … and they are doing … their programme. We've got the energy advice centre and the Energy Agency. Then we've got our own Agenda 21 outfit … we are openly competing against each other. Now, that's OK if …. what we're doing is … enabling each other. So if you are working together, you know each other, and you can bounce off each other, then that's fine. But it's pure competition for the same customers, and there can be danger there, you know, that … you [all] bolt in to achieve the same output.
>
> Interview, Energy Manager, Leicester City Council/Leicester Energy Agency, 2000

Fourth, central government policies to reorganize and modernize local government have had mixed impacts on the opportunities for local energy management, and their overall impact within Leicester remains to be seen. Fifth, the alliance of energy efficiency with different agendas within the Council, such as social inclusion, transport policy, and health may not necessarily lead to positive environmental outcomes. For example, the goals of reducing fuel poverty and addressing climate change are not necessarily coincident, and difficult decisions about the ultimate aim of local energy policies may have to be made. Finally, whether the best practice developed within Leicester can be achieved else-

where is a moot point. Not only were key individuals and political support not always present in the right combination in other local authorities, crucial to Leicester's success, but the very reliance of Leicester on external funding sources, for which there is competition between local authorities, suggests that not everyone can be a winner in this type of lottery (Guy and Shove 2000: 103).

Critics argue that the approach to managing energy demand nationally and locally has been piecemeal, with a variety of ad hoc measures established and no clear strategy, and based on a belief in the ability of the market to promote voluntary, individual action to address the environmental consequences of energy use (Bhatti 1996; Guy and Marvin 2001; Hinchliffe 1996; McEvoy *et al.* 1999). In this context, and in light of the problems identified above, the *Leicester Energy Strategy*, HECA, EMAS and the CCP programme have contributed to an approach to local energy management which emphasizes the monitoring of energy use, the provision of information and voluntary action as the means through which to achieve energy conservation (Guy and Marvin 2001). Energy flows have been modelled and scenarios for future energy demand and emissions of greenhouse gases calculated. In adopting a bounded notion of urban sustainability, this approach suggests that, through information and marketing campaigns, individual consumers, and the authority as a whole, will act more rationally in their use of energy, and will be persuaded to take energy conservation measures.

Having defined the problem of energy management in technical terms, of flows of energy and barriers to be overcome in order to implement proven energy efficiency technologies, solutions are correspondingly seen in terms of providing the right information for individuals to make decisions (Guy and Shove 2000; Shove 1998). However, 'this simple model of overcoming the barriers to rational energy use fails to focus on the complex and often contradictory processes shaping energy use' (Guy and Marvin 2001: 146). Although some measures, which address the social and institutional contexts of energy use, have also been undertaken through the Energy Sense programme and within the council's own operations, emphasis remains on the potential of technical solutions and voluntary action for reducing energy use and emissions of carbon dioxide.

Furthermore, while such approaches have undoubtedly contributed to the technical and scientific understanding of energy flows within cities, they 'do not provide much insight into the forces driving energy flows through cities', and are disconnected from the processes of institutional change which govern energy supply and management (Guy and Marvin 2001: 146). Given the lack of statutory powers within local authorities to address the institutional contexts of energy supply and demand, or to regulate energy use and supply, it is not surprising that this approach should dominate local energy management policy. However, while it may increase local accountability for climate protection, it appears to offer little by way of building local capacity, suggesting that its success in delivering a reduction in greenhouse gas emissions from the domestic sector required to meet long-term climate change goals is doubtful.

## Conclusion

The issue of climate change has been awarded a prominent place on the energy and environmental policy agenda within Leicester over the past decade, and various measures and actions have been taken in order to reduce emissions of greenhouse gases from within the City Council and across the community. Leicester's interest in energy efficiency and conservation dates back to the 1970s, and has been reinforced through the Environment City designation, subsequent local and national policy developments, and Leicester's international

profile. The process of developing inventories and forecasts of energy use and emissions of carbon dioxide, as well as developing targets, measures and strategies, took place before the Council joined the CCP programme. There is little evidence to suggest that the programme has since had any direct impact on the nature of policy development, which has instead been shaped primarily by national government policies, notably HECA. However, the CCP programme, along with other international networks with which the Council has become involved, has provided indirect support for local action on energy and environmental issues, through creating access to European funding and by conferring legitimacy on individuals within the Council who have promoted the issue of climate change as a local concern. International recognition and access to national and European funds have been mutually reinforcing. As Leicester gains more funding for research and the development of initiatives, so it gains more recognition and access to further partnership and funding opportunities. Together with a degree of continuity among local officials and politicians, and the similarities between the approaches to energy management developed within the Council and by the CCP programme, these international partnerships have kept the connections between the CCP programme and the Council open, though they have only been used on an opportunistic basis.

The development of policies and measures to address energy use within the housing sector and the City Council's own operations over the past decade has been made possible by a number of different factors. These include: the commitment and interest of individual officers and councillors; access to external sources of funding at national and European levels; shifts in national policy on home energy conservation; as well as the political kudos given by national and international recognition of Leicester's achievements. However, even given this positive context, there is little sign that the Council is close to achieving its ambitious targets for reducing energy use and emissions of greenhouse gases in the city. Within the City Council, reductions of energy use in the order of 6 per cent have been made,[6] and renewable energy projects have been established, but across the city energy use is growing, albeit by less than predicted under a 'business-as-usual' scenario (LEA 1999).

As discussed above, there are several problems which local government faces in putting energy conservation into practice in the housing sector and its own operations, including: a dependence on external funding for initiatives; a lack of power/influence over energy use; and conflicting objectives across the City Council. Given that Leicester has a deserved reputation for being at the forefront of local action on sustainability, with committed individuals and corporate goals for addressing environmental issues, this suggests that in other local authorities these problems may be even more pressing. Indeed, Guy and Shove (2000: 104) suggest that the competitive nature of local authority funding for energy conservation initiatives may mean that Leicester's success is in fact taking place at the expense of other local authorities.

The CCP programme places significant emphasis on the need to develop local accountability through modelling and monitoring emissions of greenhouse gases, and to improve local government capacity to address climate change through the provision of information on best practices. Leaving aside the technical difficulties with accessing data and creating accurate models, this case-study raises questions as to whether a lack of information is the main barrier to taking local action on climate change, and if so, whether this can be transferred successfully through the promotion of best practice examples or the creation of more 'accurate' pictures of local emissions of greenhouse gases. Within Leicester, challenges of acting for climate protection have related more to the changing nature of local

governance, the resources, power and influence of local government, and potential conflicts with other issues, such as regeneration and health. If the CCP programme is to be effective in reducing local emissions of greenhouse gases, it is clear that these issues, and the particular contexts of choices over energy conservation which different actors face, will have to be taken into consideration.

This case-study illustrates, as argued in Chapter 2, that any analysis of the potential for urban sustainability must escape from the idea of bounded localities and engage with the complex ways in which the contexts for addressing sustainability are created. In turn, this suggests that the cascade model introduced in Chapter 2 can not be used to explain how global environmental governance takes place. Leicester's experience of climate protection policies, as illustrated through the issue of energy management in the built environment, has not been the direct result of a linear process of international policy formulation, national policy adoption and local implementation. However, neither has it been the result of the adoption of best practices diffused through horizontal networks. Rather, the process of governing climate change locally is the result of opportunities and constraints created by the interplay between different spheres of authority within the state and at transnational levels. We return to these arguments, and their implications, in Part III.

# 8 Denver

## Climate protection, energy management and the transport sector

As an initial member of ICLEI's *Urban $CO_2$ Reduction Project* (see Chapter 3), Denver, Colorado has more than a decade of experience with climate protection. This chapter examines Denver's involvement in the CCP programme and considers whether, and how, participation in the network has shaped the development of climate protection policy. To this end, we focus on Denver's experience in implementing climate protection measures through energy management initiatives within the City's[1] own operations and in the transport sector. Denver, which is located in the heart of the Rocky Mountain Region of the western US, is one of the fastest growing regions in the country, with a population of 554,636. It is also the centre of a much larger metropolitan area consisting of nearly 2.5 million people (Figure 8.1). While its roots are in gold mining, Denver has transformed into a regional commercial and transportation centre. Denver's natural environment is a key part of the city's identity and its citizens have historically supported initiatives designed to protect that environment. We find that while this context has facilitated Denver's ability to take up the CCP programme, the City still faces a number of obstacles in making meaningful progress in controlling greenhouse gas emissions within its jurisdiction. We conclude by considering the implications of these findings for understandings of how the governance of climate change takes place.

### The energy agenda: from conservation and air quality to climate protection

Denver's interest in climate change is rooted in a context of concern for energy conservation and air quality issues.[2] In 1980, Executive Order 12 set up a structure and process for reducing energy consumption in municipal facilities (DEP 2002). While officials recognize that energy conservation has environmental benefits, the primary motivation behind the city's energy conservation efforts is budgetary: lower energy consumption translates into financial savings for local taxpayers. For example, a programme to retrofit 14 million square feet of office space with energy-efficient technology annually saves the city nearly $30,000 (EPA n.d.b.). Denver also has a long history of struggling with air quality issues. In the 1970s and 1980s, Denver was notorious for its 'brown cloud'; in 1975, the city had 177 days in which its air was rated as unhealthful or very unhealthful (RAQC 2001). In the 1980s and 1990s, city officials worked closely with other municipalities in the region, as well as with the private sector, to address air quality issues, focusing on reducing pollutants from wood-burning fireplaces in homes, street sanding and vehicles. The city

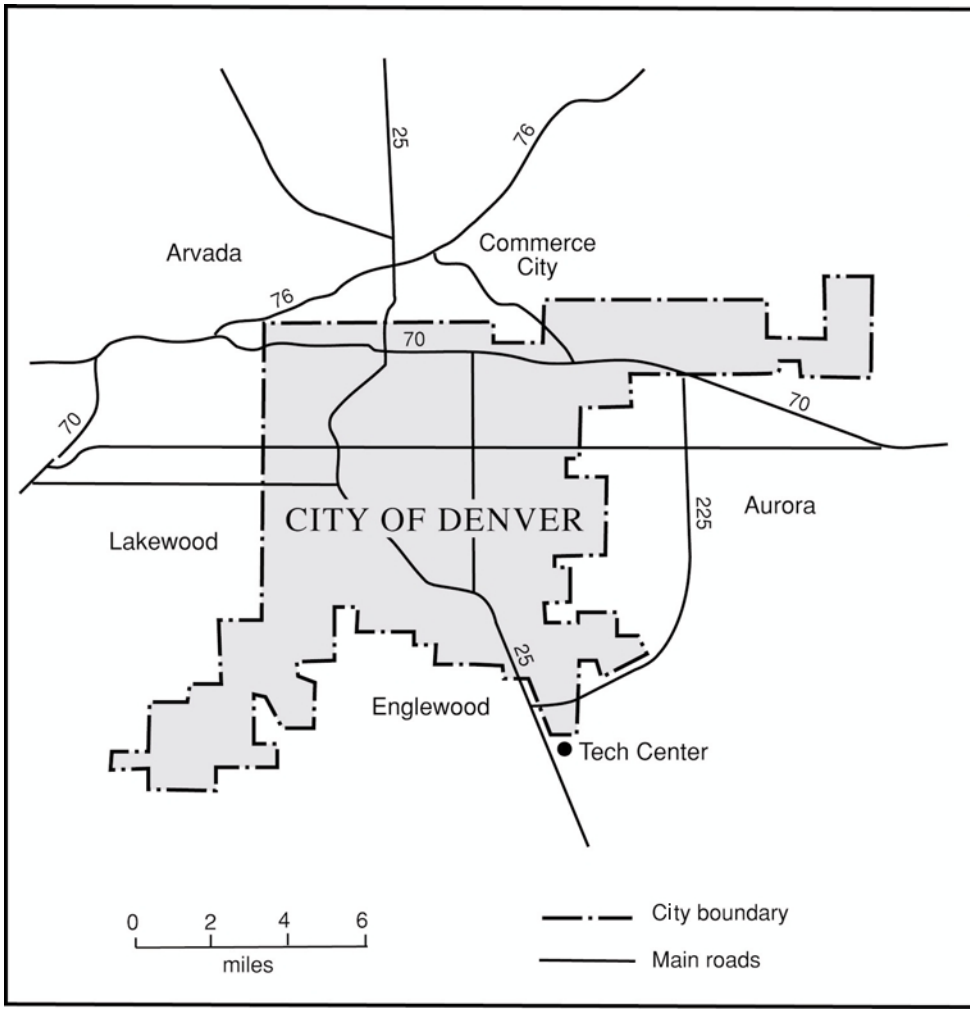


*Figure 8.1* Map of the City of Denver

regularly asks citizens to voluntarily limit their driving and refrain from burning wood on 'red' air quality days. In addition, state and local ordinances restrict the use of wood-burning fireplaces in new construction. These measures appear to have had their intended effect; since the late 1990s, Denver has rarely violated national air quality standards.

Denver's interest in climate change, which dates back to the early 1990s, can be traced to one entrepreneurial individual with the Department of Public Health (now Department of Environmental Health) who had a background interest in renewable energy. This individual, upon learning about ICLEI's *Urban $CO_2$ Reduction Project*, recognized that the programme's goals were consistent with Denver's existing efforts related to energy management and air quality issues. Moreover, it provided an opportunity to promote the City as an environmental leader. Denver's commitment to climate protection was formalized in City Council Resolution 28, which was passed on 18 March 1991. The Resolution notes that:

> … the city and county of Denver has already aggressively committed resources and taken leadership position in passing environmental ordinances which control wood-burning, control the release of chlorofluorocarbons, limit certain uses in industrial zones, and promote alternative fuels …
>
> DCC 1991

The resolution and Denver's participation in the ICLEI campaign reportedly prompted little debate within the City Council, the municipal government or the broader community. In reality, the resolution was non-threatening since it focused only on the public sector and legally carried little weight. Resolutions are used to express commitment to principles without committing to concrete action. Another important factor in the City's commitment to climate protection has been Mayor Wellington Webb (a Democrat in office since 1991), who wishes Denver to be viewed as an environmental leader. This is reflected in both the 1991 City Council resolution and the 1995 *Mayoral Proclamation* officially noting the City's membership in the CCP campaign (CCD 1995; DCC 1991). Under Mayor Webb, Denver became the second city in the US to receive the 'Clean Cities' designation.[3] Webb has also supported the provision of additional financial resources for improving energy conservation within the City's municipal operations. Recognizing Mayor Webb's commitment to environmental leadership, officials throughout the municipal government routinely look for opportunities to achieve environmental benefits and often use this to gain support for their projects. Besides the CCP programme, Denver participates in a number of other networks (primarily US-based) of local governments concerned with energy conservation, including Public Technologies, Inc., US Green Buildings and Rebuild America. The latter two are networks sponsored by the US Department of Energy.

Although Denver was an early adopter of the CCP programme, it did not immediately take up the milestone approach in its entirety. In developing its first action plan, the City did not select a specific reduction target; rather, in line with the CCP approach, officials focused on implementing cost-effective measures designed to maximize the economic co-benefits. Initially, Denver's climate protection focused on three programmes: *Green Fleets* (see Box 8.1); *Green Lights* (a scheme to retrofit municipal buildings with energy-efficient lighting); and tree-planting. By 1997, these programmes had achieved annual carbon dioxide savings of 1,500 metric tonnes (DEP 2002). A revised plan, which is scheduled for adoption in 2002, sets a goal of reducing Denver's per capita greenhouse gas emissions 10 per cent below 1995 levels by 2010 (DEP 2002). Rather than adopt the target of reducing emissions to 20 per cent below 1990 levels, as suggested by the CCP programme, Denver has chosen to focus on per capita emissions and to use a 1995 baseline to reflect the fact that Denver experienced rapid growth in the 1990s, a trend projected to increase over the coming decades. The new plan consists of many more measures than the first action plan, although in each case they are organized into five categories: (1) energy efficiency and conservation in buildings; (2) expanding the use of renewable energy; (3) transport and land-use; (4) conservation and education; and (5) the capture and storage of carbon dioxide. Denver reported that by 2000, these measures had achieved annual greenhouse gas reductions of more than 23,000 metric tonnes. While Denver does regularly monitor and report on its climate protection measures and calculates the economic as well as the environmental effects of those measures, it does not do so for all activities linked to greenhouse gas emissions. Instead, routine monitoring is limited to a handful of programmes, partly because the task of monitoring, calculating and reporting on emissions is beyond the

capacity of the one individual responsible for climate protection in Denver, and partly because that individual prefers to calculate emissions and emissions savings by hand using aggregate data from the state and national governments rather than the CCP software.[4] Consistent with the CCP programme, Denver officials recognize the significance of the co-benefits that derive from climate protection. With the exception of the *Green Fleets* programme, all of Denver's climate protection initiatives were motivated by factors other than climate change and the desire to reduce greenhouse gas emissions.

**Box 8.1: *Green Fleets* (from ICLEI 2002c)**

In the early 1990s, two individuals within the Denver city government began looking for ways to make the municipal fleet more efficient. The result was the 1993 *Green Fleets Executive Order*, which requires managers to look for ways to reduce energy costs associated with operating the municipal fleet. The original policy called for reducing the size of the fleet as well as the size of vehicles in the fleet and vehicle miles travelled. It also recommended that managers purchase alternative-fuel vehicles. All city departments are required to reduce their fuel expenditures by 1 per cent and carbon dioxide emissions by 1.5 per cent annually. All budget decisions regarding the purchase of fleet vehicles are reviewed by the city's *Green Fleets* committee. By 2005, Denver expects to realize an annual saving of more than $100,000 and to reduce carbon dioxide emissions 22 per cent below 1992 levels. Today, ICLEI co-ordinates *Green Fleets* programmes in the US and Europe. ICLEI emphasizes the environmental costs of municipal fleets, noting that 'every gallon of fuel burned releases 22 pounds of carbon dioxide ($CO_2$), the major pollutant causing global warming'.

One effect of the CCP programme can be seen in the way Denver has organized itself to address climate change. Denver's climate protection programme, which cuts across numerous City departments, has been institutionalized in the sense that it is an explicit part of the Environmental Protection Division's portfolio. The division, which falls within the Department of Environmental Health, has one full-time staff member (on loan from the city planning office) who keeps track of projects being implemented by various departments throughout the municipal government, updates the City's greenhouse gas emissions inventory and calculates emissions savings. This individual also serves as a liaison between the Environmental Protection Division and other parts of the City government, such as the Utilities Division and Traffic Operations Division within the Department of Public Works and the Department of Parks and Recreation, creating communication channels that can be used to address other environmental issues in addition to climate change. For example, in 2000 the Environmental Protection Division used these channels in co-ordinating work on sustainability as part of the City's comprehensive planning process. However, as one local official was quick to note, having communication channels available is insufficient; collaboration between departments depends on leadership. There must be an individual willing to press issues that cut across municipal bureaucracy. One concern is that the person currently responsible for co-ordinating climate protection in Denver is likely to retire in the next few years. In an effort to maintain continuity, the Environmental Protection Division plans to create an energy conservation position in

2003, with the expectation that climate protection will be one of the responsibilities assigned to the post.

Denver officials note that a key benefit of participation in the CCP network (as well as other networks of local governments) is the opportunity to interact and collaborate with other communities. Denver regularly sends delegations to CCP workshops and conferences, including individuals from a range of departments as well as elected officials, which can be useful in helping individuals learn about the ways in which climate protection is consistent with other local issues. It is interesting to note, however, that Denver is a net provider of information about best practice within the CCP network. Denver is typically recognized as the model for the *Green Fleets* programme, which has since been adopted by a number of CCP communities around the world (ICLEI 2002c). In February 2000, a representative of Denver's *Green Fleets* committee travelled to Bangkok to advise officials there as they developed their own programme, and in September 2000, Steve Foute of the Environmental Protection Division gave a presentation on *Green Fleets* to ICLEI-US participants at a workshop on 'Protecting the climate with smart transportation choice and an engaged public'. As discussed below, Denver has also been a leader in the development of light-emitting diode (LED) technology for traffic lights – another programme that has been widely taken up by other CCP communities in the US.

However, none of Denver's climate protection programmes can be linked to best practice information obtained through the CCP network. There are two related explanations. First, Denver officials have found it difficult to take up initiatives developed in municipalities with different political, funding and staffing situations. Second, the most cost-effective initiatives for controlling greenhouse gas emissions have already been adopted in Denver, limiting the City's ability to take up new ideas. Participation in the CCP network does, however, provide Denver with benefits that go beyond the receipt of best practice information. First, it offers an incentive for City officials to look for opportunities for controlling greenhouse gas emissions that might not be considered otherwise. When Denver first joined the *Urban $CO_2$ Reduction Project*, it took existing programmes and repackaged them as climate protection initiatives. The CCP programme encourages local authorities to evaluate existing programmes in terms of greenhouse gas reductions in order to demonstrate that addressing climate change is consistent with things they are already doing. The expectation is that once communities recognize the co-benefits of climate protection, they will be more willing to look for other ways to control greenhouse gas emissions. Indeed, Denver officials note that regular interaction among CCP members creates a system of accountability and competition, whereby municipalities monitor each other and try to outdo one another. In other words, the network motivates members to go beyond 'business-as-usual'. The personal relationships developed through the CCP network have also proven useful in getting quick access to information and taking advantage of funding opportunities. For example, Denver has joined other CCP communities in Colorado in a bid to host the 2003 CCP-US conference with funding from the Department of Energy and the Environmental Protection Agency. Participation in networks such as the CCP also provides opportunities for Denver to enter into the spotlight and demonstrate its leadership in the environmental arena. Politically, such recognition has been useful in gaining support for climate protection from other parts of the City government.

Denver's climate protection programme focuses primarily on controlling emissions from municipal operations, rather than from across the city, largely because local utilities and other industry members oppose any climate-related policies. In Colorado, the primary

source of electricity is coal combustion, which accounts for more than 99 per cent of all electricity produced (CDPHE 1998). The Colorado coal industry was behind a provision in the state's 1999 appropriations bill forbidding the expenditure of any state funds to implement the *Kyoto Protocol* until the treaty has been ratified by the US Senate (CGA 1999). In addition, objections from the state's fossil fuel industry caused officials with the Colorado Department of Public Health and the Environment to revise a process for assessing the state's greenhouse gas emissions. They abandoned efforts to involve stakeholders in the assessment process and instead conducted the analysis in-house, with no outreach or follow-up. Given this political climate, Denver officials have kept their efforts to control municipal greenhouse gas emissions relatively quiet. There has been virtually no public outreach, and the City's efforts have remained focused primarily on the public sector. Instead, officials hope to gain support from climate protection by leading by example:

> Denver has a history of leading by example; we prove it can be done before we ask citizens, the private sector and other municipalities to join in.
>
> DEP 2002: Leadership and Vision

In 2002, many of the City's departments will move to the new City and County Building, which has been designed and built to achieve maximum savings in terms of energy efficiency and conservation and to take advantage of renewable energy sources. Denver officials hope to use this project as an opportunity to demonstrate the City's leadership and to develop partnerships with members of the private sector.

In the future, there may an be an opportunity to further integrate climate protection in Denver's City government and to reach out to the private sector. This is linked to the *Denver Comprehensive Plan 2000* (CCD 2000), a document meant to guide planning and policy decisions over the next decade. The Plan takes the goal of sustainability as its starting point, explicitly recognizing the need to balance economic, environmental and social objectives:

> Sustainability refers to the long-term social, economic and environmental health of a community. A sustainable city thrives without compromising the ability of future generations to meet their needs. A sustainable city manages resources efficiently and effectively by using only what is needed, replacing as much as possible, encouraging everyone's contributions, and distributing opportunities and risks equitably.
>
> CCD 2000: 5

Many of Denver's climate protection initiatives are presented in the plan as strategies for meeting this objective of sustainability. For example, measures identified as means to ensure environmental stewardship include 'leading by example to adopt policies that further the use of renewable energy resources and creating "green" city buildings', and 'continuing the City's efforts to reduce greenhouse gas emissions' (CCD 2000: 39).

To summarize, we find that the CCP programme has had a considerable effect on the way the City of Denver approaches climate protection. Although Denver's initial involvement in the *Urban $CO_2$ Reduction Project* was based on actions already taken, the City's strategy has since evolved and expanded in line with the logic of the CCP programme. The city has focused on measuring and monitoring emissions, with the expectation that such information can be used to identify opportunities to achieve reductions. Denver can

be said to have an 'open' connection to the CCP network in that officials routinely interact with CCP officials and other network members, largely to share information and support one another in their climate protection efforts. Through participation in networks such as the CCP, Denver has gained recognition as an environmental leader. However, despite their commitment to issues of climate protection, officials note a number of obstacles that make it difficult to transfer best practices between places and to achieve significant emissions reductions. We turn now to an examination of Denver's efforts to implement climate protection in the energy management and transport sectors, in an effort to gain a better understanding of these constraints.

## Climate protection, energy management and transport

Denver's climate protection initiatives have focused largely on managing energy use in municipal operations and on the transport sector. These initiatives have not, however, taken place in isolation. Rather, the City's efforts to control greenhouse gas emissions in particular, and to achieve urban sustainability more generally, are profoundly shaped by the governance of energy management and transport at other levels. In this section, we discuss Denver's climate protection efforts in this broader context to illuminate the opportunities and constraints faced by the City as it seeks to put climate protection into practice.

### *Energy management and the problem of supply*

Denver's interest in energy management, which dates back several decades, does not follow the 'cascade model' outlined in Chapter 2. Rather, its policy has evolved independently from, and indeed in advance of, the national debate. Since the 1970s, US energy policy has been linked to national security. Americans feel a sense of vulnerability due to their heavy reliance on foreign sources of oil. Thus, US energy policy has focused on securing energy independence, both through an increase in production as well as through conservation measures (Grundy 1994). This need to ensure an adequate energy supply is clearly central in discussions of energy policy under the Bush Jr Administration. In its May 2001 report, the National Energy Policy Development Group (a group of 14 federal officials led by Vice-President Dick Cheney) highlights 'a fundamental imbalance between supply and demand' in the US and asserts that this 'imbalance, if allowed to continue will inevitably undermine our economy, our standard of living and our national security' (NEPDG 2001: viii).

The link between energy policy and environmental concerns was not developed at the national level until the late 1980s, when Bush Sr came to office. Concern over America's energy dependence re-emerged and prompted Congressional consideration of a new national energy policy. At the same time, Congress was debating the 1990 *Clean Air Act Amendments*, which highlighted the environmental effects of energy use (Grundy 1994). This debate took place during the lead up to the 1992 Rio Conference and in the context of an emerging awareness of global climate change. Recognition of this relationship between energy and the environment is reflected in the *Energy Policy Act* of 1992, which focuses on energy efficiency/conservation and the development of alternative energy sources. An entire section of the Act explicitly addressed the problem of global climate change and called for the development of a 'least-cost' energy strategy designed to increase the nation's energy efficiency and use of renewable energy resources and to reduce oil consumption. It was in the context of the *Energy Policy Act* that the Clinton

Administration developed its 1993 *Climate Change Action Plan*, which established more than 50 new and expanded initiatives designed to encourage voluntary public–private partnerships to achieve the joint goals of strengthening the US economy and responding to the threat of global climate change (Clinton and Gore 1993; see also Chapter 3). The *Action Plan* placed heavy emphasis on demand-side management through investment in energy efficiency and conservation. However, most of the initiatives included were focused on electric and gas utilities as well as other industries, with little consideration of the role of local governments.

Denver officials acknowledged the link between energy and the environment nearly a decade before the federal government. Within the City, support for energy efficiency and conservation initiatives has never been linked to national security. Rather, the emphasis has been on the recognition that such measures produce considerable economic savings for the City government and taxpayers, as well as improvements in air quality and reductions in greenhouse gas emissions. Emissions from electric utilities accounted for 29 per cent of US greenhouse gas emissions between 1990 and 1999, with the vast majority of those emissions deriving from the combustion of coal (EPA 2001b). In Colorado, the utility sector was the largest contributor to the state's 1990 greenhouse gas emissions, responsible for 47.5 per cent (CDPHE 1998). Efforts to reduce emissions from this sector could focus on decreasing levels of demand through energy efficiency and conservation measures and/or altering the energy supply by switching to less carbon-intensive energy sources (e.g. natural gas). Denver's climate protection strategy has focused primarily on demand-side management, largely because it is seen to present a win–win option by reducing greenhouse gas emissions and budget expenditures simultaneously (Table 8.1). As noted above, most of these initiatives focus on in-house energy management.

In Denver, management of energy use in the built environment has been central to climate protection as well as the general goal of sustainability and illustrates the multilevel nature of governance in this sector (Table 8.1). While responsibility falls primarily to the Utilities Division of the General Services Department, which manages more than 14 million square feet of office space occupied by the municipal government, Denver's energy management programme is conducted in partnership with the *Green Lights* and *Energy Star* programmes co-ordinated by the US Environmental Protection Agency (as part of the *Climate Change Action Plan*). The City has implemented a number of measures to reduce energy expenditures for these buildings, including the application of window film to reduce heat entering in summer and escaping in winter and an upgrade of lighting fixtures. Together, these initiatives save the city more than $500,000 annually and account for a saving of more than 1,400 metric tonnes of greenhouse gas emissions each year (ICLEI 2000). In 1997, the US Environmental Protection Agency proclaimed Denver its *Green Lights* Government Partner of the Year in recognition of its energy efficiency efforts. Denver has also integrated energy efficiency into a broader framework of sustainability in its *Comprehensive Plan 2000*. Within this context, Denver requires that all new and remodelled municipal buildings be reviewed in the design phase for their overall sustainability (including energy conservation/efficiency as well as access via alternative transport, landscape, etc.).

Denver has also been on the cutting edge of developing new technologies for reducing energy use in municipal operations. In 1996, the City began installing LEDs in all red traffic lights and 'don't walk' signs in the city's 1,200 intersections (21,000 units). LEDs consume considerably less electricity than incandescent bulbs (6–25 watts vs 69–150 watts) and last much longer (100,000+ hours vs 8,000 hours). The City

*Table 8.1* Energy management initiatives in Denver

| *Programme* | *Description* | *Estimated annual GHG savings (metric tonnes – $CO_2$ equivalent)** |
|---|---|---|
| LED traffic signal retrofit | Replace red lights and 'don't walk' signs at 1,200 intersections with LEDs; begin to install yellow and green lights | 8,657 |
| Mile High Stadium retrofit | Switched heating system from electricity to natural gas | 1,600 (however the stadium has recently been demolished meaning that these reductions are no longer achieved) |
| Energy efficiency mortgage programme | Allow higher loans for homes meeting higher energy efficiency standards | 3,324 |
| Wind purchase | Municipal government to buy 667 blocks of power (100 kWh each) monthly from Public Service Co. of Colorado's wind farm | 800 |
| Energy efficiency in municipal buildings | City has applied window film to reduce heat entering in summer and escaping in winter | 470 |
| | City has upgraded lighting in 14 million square feet of office space | 990 |
| Solar access ordinance | Protects rooftop solar access in city neighbourhoods | Not calculated |
| Electrical use policy-plug load | Adoption of electrical use policies designed to minimize energy use by office machines | Not calculated |

*Source: *ICLEI 2000.*

spent $1.6 million on the replacement project (for acquisition and labour), but has enjoyed substantial savings in terms of energy and maintenance costs (estimated at $356,840 per year) and expects to realize $5 million in savings *after* covering its initial investment (in four years). Lower energy use translates into an annual saving of 8,600 metric tonnes of carbon dioxide (ICLEI 2000). While financing investment in energy efficiency can be difficult for many local governments given the significant up-front costs, Denver's Utilities Director had the advantage of a small discretionary fund set aside for investment in new technologies. Upon learning of the LED technology, the director used these funds to make the initial investment, which proved to be an important factor in getting the support of the Traffic Services Division, as they were reluctant to divert their own resources to the project. Three years later, when it was time to request City funds to expand the LED project, the director had an economic analysis available with evidence of immediate economic benefits (in terms of energy savings and reduced labour costs). It is important to note that the Utility Director regularly collected this type of data for energy conservation measures independent of the CCP programme. He did, however, also calculate the greenhouse gas emissions savings derived from the LED project at the suggestion of individuals involved with the

City's CCP initiative, and found it easy to do so using the software developed by ICLEI.

Denver has employed other creative means for financing energy conservation and efficiency initiatives. The City has benefited from a rebate programme operated by the Public Service Company of Colorado (now Xcel Energy), the local utility, for investment in energy efficiency measures, which ultimately helps the utility company meet peak demand. More than $1 million in rebates have been funnelled back into the city's energy management programme (EPA n.d.b.). In 2001, Denver established a Green Building Fund consisting of $150,000 to be distributed over two years to finance energy efficiency, conservation and renewable energy projects in new or remodelled municipal buildings. The City intends to replenish the fund as needed between 2001 and 2010 (DEP 2002). Financing energy efficiency measures is much more difficult when local officials must rely on city councils for the resources. Doing so means competing with other departments for increasingly scarce funds, and budget officers are often reluctant to provide large-scale investments so that officials are forced to make investment in piecemeal fashion, which is more costly (and less effective) in the long run.

Of course, greenhouse gas emissions from energy use depend not only on the demand for power but also on the means used to produce that power. Denver is limited in its ability to alter energy supply since the City does not own its own utility. In the US, states have the authority to regulate utilities. Historically, single utility companies have created monopolies in individual states, both in terms of ownership over production facilities and of transmission lines. Each state created a regulatory commission to protect its citizens from abuses but, in general, consumers had virtually no ability to choose their power supplier (Hirsh 2000). While the seeds of deregulation were planted in the 1970s, it was the 1992 *Energy Policy Act* that allowed for retail competition in the utility industry if state regulators chose to allow it. Today, 16 states plus the District of Columbia have chosen to open the utilities sector to competition, believing this will spur development of more efficient technology, increased use of renewable resources and, ultimately, lower prices for consumers. Colorado, however, has chosen not to deregulate its utilities sector, citing its currently low electricity rates, fears that rates would rise with competition and concern about the impact of rate increases on low-income and rural consumers (US DoE 2002). As a result, decisions related to the means used to produce Denver's electricity are made outside the jurisdiction of the municipal government.

In the 1980s, Denver officials proposed to convert power plants within the city to natural gas as a way of addressing air quality issues. This proposal faced strong opposition from the local utility company and the state's coal interests and was ultimately abandoned following a 1988 study that determined power plants were not a principal cause of the city's air quality problems (RAQC 2001). Today, Xcel Energy, the nation's fourth largest utility, supplies Denver's electricity. More than half of the power produced and purchased by Xcel is generated by coal. In 1996, Xcel launched its *Green Power Plan* designed to develop markets in renewable energy sources. By the end of 2002, Xcel plans to have a capacity of 800 megawatts of wind generation. Currently, customers can purchase 100 kWh blocks of wind energy, but they are required to pay a surcharge of $2.50 for each block (Xcel Energy 2002). As part of its sustainability effort, the City of Denver purchases over 600 blocks of wind energy monthly. However, this accounts for a fraction of its overall energy consumption.

In Denver, local government officials have long recognized the link between energy and the environment, and in recent years have come to acknowledge that energy

management can be used to address the problem of climate change as well as broader goals of sustainability. While the City has had limited success, it is increasingly clear that its ability to affect long-term change in the way energy is produced and consumed is constrained by the broader political context. Authority to make decisions about how electricity is produced lie outside the City's jurisdiction, and the power of the state's coal industry limits the ability of the municipal government to promote energy conservation measures outside the public sector. Such constraints have limited the ability of Denver to draw on best practice information from other CCP cities where the political context is more favourable. Denver's experience with energy management suggests that achieving climate protection goes beyond the provision of information and requires that the links between actors and activities operating at a variety of different levels be recognized. In the following section, we find that efforts to promote climate protection and urban sustainability in the transport sector are similarly restricted by the broader political context within which policies are shaped.

### *Transport planning and the politics of growth*

In the US, transport planning has historically assumed universal car ownership. As a result, American cities tend to be sprawling, characterized by low-density, long travel distances and little public transport. Americans are heavily dependent on private vehicles, which accounted for 97 per cent of all motorized passenger travel in the 1990s. In this respect, Denver is a typical American city, with relatively low urban density (12.8 persons/ha) and heavy use of private vehicles (10,011 kms per capita). In 1990, a mere 1.5 per cent of all passenger trips in Denver were made using public transport. In contrast, the average European city has much higher density (49.9 persons/ha), lower use of private vehicles (4,519 kms per capita), and a higher percentage of all passenger trips using public transport (22.6 per cent) (Kenworthy and Laube 1999). The Denver region has experienced rapid population growth over the past decade, adding more than 161,000 people between 1990 and 1996. This growth has been accompanied by dramatic increases in vehicle miles travelled (VMT), which have outpaced population growth. In 1995, daily VMT was estimated at 48,600,000 (DRCOG 1997) and traffic congestion has become a major issue in the metropolitan area. A 1999 survey identified Denver as the sixteenth-most-congested city in the country. The survey also found that the average driver in Denver sits in traffic jams for more than 45 hours annually (compared to 13 hours in 1989) (Fong 1999).

In the US, the transport sector accounted for 26 per cent of national greenhouse gas emissions in the period 1990–1999 (EPA 2001b), and in 1990 contributed 27.7 per cent of emissions in Colorado, second only to the utilities sector (CDPHE 1998). It is clear that reducing greenhouse gas emissions in this sector will require a heightened role for public transport in urban areas. In an extensive cross-city survey, Kenworthy and Laube (1999) found that public transport accounts for a very small proportion of greenhouse gas emissions in urban areas, even in those cities where it is heavily used. As a result, they argue, 'increasing the role of public transport is critical to conserving precious liquid fossil fuels and in helping cities to meet their global responsibilities with respect to greenhouse gas reduction' (Kenworthy and Laube 1999: 38). Of course, it should be recognized that enhancing the role of public transport is not the only way to reduce emissions from the transport sector. Other options for demand management include reducing the need to

travel through urban planning and promoting alternatives, such as cycling and walking (see also Chapter 6).

Carr and Docherty (2000) argue that there are essentially two categories of policy tools that can be used to increase the role of public transport in an urban area: carrots and sticks. Carrots are incentives that local governments can use to make public transport a more attractive transportation option. For example, municipalities can increase availability by extending hours and/or routes and by investing in new modes of transport, such as light rail service. In addition, local governments can provide information to citizens about the availability and benefits of public transport. Sticks are policies that local governments can use to make private vehicle use a less attractive option. Policies include limiting the proportion of road space available to private cars compared to buses, charging tolls on highly congested roadways, and introducing/increasing parking fees. Marvin and Guy's (1999b) 'persuasive' and 'soft' strategies discussed in Chapter 6 fall under the category of carrots, while their 'hard' strategies can be viewed as sticks. Like Cambridgeshire County Council, the City of Denver has primarily used carrots to try to reduce VMTs and encourage a shift from private vehicles to public transport. Its climate protection efforts in the transport sector fall within the city's travel reduction programme, which was initially established in 1992 as part of its broader efforts to address air quality (Table 8.2). A central element of this programme is a bus pass subsidy for more than 1,300 municipal employees, saving 500,000 person trips annually as well as avoiding more than 1,600 metric tonnes of greenhouse gas emissions each year (ICLEI 2000). In 1993, the City's *Green Fleets* policy (Box 8.1), which requires municipal agencies to 'purchase the most cost-effective and lowest emission vehicle possible, while still meeting the operational requirements of the agency' was incorporated into the travel reduction programme (CCD 1999).

Despite these efforts, Denver's ability to prompt a modal shift is limited given the regional governance of the transport sector in the Denver metropolitan area. Decisions related to

*Table 8.2:* Transport initiatives in Denver

| *Programme* | *Description* | *Estimated annual saving (metric tonnes – $CO_2$ equivalent)** |
|---|---|---|
| Green Fleets | Replace older vehicles in the municipal fleet with the most cost-effective and lowest-emitting vehicles possible with the objective of reducing carbon dioxide emissions 1.5% per year and fuel expenditures 1% per year over a 10-year period. | 83 |
| Bus Pass Subsidy Program | Provide subsidies to 1,300 city employees, saving 500,000 person trips/year. | 1,649 |
| Performing Arts Shuttle Service (PASS) | Shuttle service to provide access to downtown cultural attractions. | Not calculated |
| Alternative fuel vehicles | Municipal government has three electric vehicles for employee travel within the downtown area as well as 39 Toyota Prius hybrid cars. | Not calculated |

*Source: *ICLEI 2000*

transport planning are made by three bodies (Lewis 1996: 101–105). The Regional Transportation District (RTD), a regional authority created in 1969 to serve 42 municipalities in six counties, is responsible for Denver's public transport system, which consists of buses and light rail. The Colorado Department of Transportation makes decisions related to investments in highway transportation as well as state and inter-state roadways. The Denver Regional Council of Governments, a voluntary alliance of 50 county and municipal governments in the Denver metropolitan area, plays an advisory role in regional transport planning. While Denver has representation in the first and last of these bodies, it is but one of a number of voices contributing to debates about transportation planning and investment, and its interests often conflict with those of its suburban neighbours (Venner 1999).

At the national level, the US government has sought to prompt a modal shift through a new system of financing investments in the transport sector. Paaswell (1995) argues that the 1991 International Surface Transportation Efficiency Act (ISTEA) represents a shift in transport planning away from supporting increases in VMTs by single occupant vehicles toward a more integrated system that considers not only transport demand but also environmental issues, such as air quality and problems associated with urban sprawl (see Chapter 9). ISTEA altered the system for financing transport investment in the US by combining federal funds for highway and public transport projects, which is designed to give local governments the flexibility to allocate infrastructure investment according to their specific circumstances. In the past, highway programmes have been funded at much higher rates than public transport projects and local governments did not have the opportunity to transfer funds from highways to public transport. The intent of ISTEA was to force municipalities to consider multimodal transport options and to allow financing to be adjusted to their individual needs (with the expectation that a greater proportion would go to public transport than in the past). However, despite its intentions, it is not clear that ISTEA has altered transport planning in the Denver metropolitan area. The Denver Regional Council of Governments, serving as the designated metropolitan planning organization, is responsible for producing long-range development plans for the region. Its Transportation Division reviews and evaluates proposals for transport projects. In general, the division has not taken the opportunity to redirect funds to public transport as encouraged under ISTEA. In 1997, the Denver Regional Council of Governments released its *Metro Vision 2020* report, which identified the growth challenges facing the region as well as a number of strategies for addressing these challenges. The plan continues to emphasize investment in highway capacity over public transport, proposing $3.64 billion in highway capital improvements compared to $2.35 billion for alternative forms of transport infrastructure. In addition, the plan identifies the RTD as the sole source of public transport funding, again overlooking opportunities to divert other sources of financing to this area (DRCOG 2001; Venner 1999).

The Transportation Expansion Project (T-REX) currently underway in Denver is another example of the region's emphasis on road construction as a response to congestion. The T-REX project is a collaborative effort between the Colorado Department of Transportation and the RTD with support from the Federal Highway Administration and the Federal Transit Authority. The $1.67 billion project is designed to alleviate congestion between downtown Denver and the Denver Tech Center, located approximately 10 miles south of the city centre (Figure 8.1). More than 200,000 people work in these two employment centres and along the corridor, a number that is expected to double in the next two decades. The project includes expansion of the City's light rail system as well as widening of I-25, the major north–south interstate in the region (T-REX 2001). The

public transport portion of the project generated some controversy. In 1997, area voters defeated a tax increase proposed to fund light rail expansion. Two years later, voters approved a proposal to finance a more limited expansion in the south-east corridor, but critics continue to argue that people will not use the system, as they will not wish to give up the freedom of their private vehicles. Looking to the future of transport planning in the state of Colorado, the Department of Transportation's Executive Director Tom Norton states, 'I suspect roads will be the backbone of our transportation system for many, many years to come' (Garner 2001: 7A). In other words, the new realist approach to transport discussed in Chapter 6, whereby it is recognized that demand can not be met so it must be managed, has not taken root in Colorado. The emphasis on road construction at the state and regional levels will continue to make it difficult to increase the role of public transport in the City of Denver. High levels of road infrastructure are usually associated with low public transport provision and use since increasing road supply decreases incentives for passengers to switch from private vehicles to public transport. In the end, such investment may actually lead to increased levels of VMTs and congestion, thereby undermining the city's climate protection goals (Banister and Lichfield 1995; Kenworthy and Laube 1999).

As was the case with energy management, the governance of the transportation sector transcends a bounded locality. While city officials have made attempts to reduce travel demand by municipal employees, they have limited jurisdiction over transport-related decisions and thus have little capacity to prompt a modal shift within the city. Moreover, decisions made at the state and regional levels have increased the capacity of citizens in the region to travel through the provision of more roads. The ability to implement climate protection measures in this sector go beyond the need for more information and require fundamental reforms at other levels of governance. The CCP programme does little to enhance the capacity of local authorities to address these contextual factors, in turn limiting the ability of city governments to achieve goals of climate protection and sustainability.

## Conclusion

Denver was one of the first American cities to put climate protection on its agenda, and in the past decade the City has successfully implemented a number of measures to reduce its greenhouse gas emissions. Denver has been a participant in ICLEI's climate protection networks, the *Urban $CO_2$ Reduction Project* and the CCP programme, since their inception. With the exception of *Green Fleets*, however, none of Denver's climate protection initiatives can be linked directly to the CCP programme. Denver's interest in energy conservation pre-dates its participation in the ICLEI climate campaigns and is rooted in concerns over local air quality and the desire to save money. While the Utilities Director is happy that programmes such as the LED retrofit help the environment, he emphasizes that protecting the climate is not his primary motivation. It is entirely possible that such programmes would have been developed regardless of the city's participation in the CCP network. In addition, there is little evidence of learning from other CCP communities; rather, Denver is frequently a provider of best practices information to other CCP members.

At the same time, however, there are visible signs that the CCP programme has enhanced the ability of the city to address climate change, specifically by providing a framework for co-ordinating efforts across divisions. Officials throughout the municipal

government increasingly calculate the greenhouse gas emissions savings from their projects, sometimes using the CCP software, something that would not occur without the city's participation in the programme. This organizational framework has also been accompanied by commitment of the human resources necessary to carry out the work of co-ordinating the city's climate protection campaign. At least one official noted the importance of having someone 'passionate' about climate protection to keep the momentum going. Perhaps the greatest significance of the CCP network has therefore been its effect in keeping individuals passionate about climate protection. Regular interaction with the CCP network can be an effective way to motivate entrepreneurial individuals to continue their efforts to promote climate protection in their communities even when faced with numerous institutional and financial obstacles.

Despite their progress, officials in Denver face considerable obstacles to climate protection, including strong opposition from local business interests. This opposition has prevented the City from expanding its climate protection programme outside the municipal government and from taking advantage of opportunities to educate citizens about climate change and its local dimensions. The City also has limited jurisdiction over the two main greenhouse gas producing activities: energy use and transport. Local officials have a low degree of autonomy and restricted authority in shaping decisions regarding energy production and use, and it will be difficult for the City to control greenhouse gas emissions in the transport sector so long as the region is faced with population pressures and leaders determined to increase road capacity in the foreseeable future. Denver's experience with climate protection illuminates the multilevel nature of climate change governance. The challenge for local authorities goes beyond the need for additional information on greenhouse gas emissions and best practice. To the extent that the CCP programme continues to ignore the broader context in which its members operate, it will have limited success in enhancing the capacity of local authorities to address the problem of climate change.

# 9 Milwaukee

## Climate protection and new urbanism

This chapter examines climate protection in Milwaukee, Wisconsin, a city of 600,000 people located in the upper Midwest region of the US on the shores of Lake Michigan, approximately 90 miles north of Chicago. Although the City was one of the first communities to join the CCP-US campaign, we find that a meaningful connection has never been established between the local authority and the CCP network and that concern for controlling greenhouse gas emissions largely remains external to policy development. While Milwaukee has not explicitly developed a strategy for addressing climate change, it has embraced the principles of 'new urbanism', a planning strategy that seeks to promote sustainable urban development. In the second section, we consider the evolution of new urbanism and its relationship to sustainable development and climate protection. Specifically, we consider whether the planning principles that are central to new urbanist thinking can contribute to the goal of controlling greenhouse gas emissions in Milwaukee, or elsewhere. While new urbanism implicitly includes policy principles to reduce greenhouse gas emissions, they are based largely on the assumption that planning for compact forms of development and alternative forms of transport can reduce energy use (see also Chapters 5 and 10). In practice, we find that the relationship between planning, urban energy use and sustainability is not clear. Rather than serving as a simple means of implementing sustainable development, Milwaukee's efforts to apply new urbanist principles have brought to light the tensions between economic, environmental and social objectives.

### Protect the environment, protect the climate?

Milwaukee's interest in climate protection stems from the personal interest and contacts of Mayor John Norquist, a Democrat elected in 1988, who reportedly knew the head of ICLEI and encouraged one of his staff members to get involved with the CCP campaign.[1] Norquist has a general interest in environmental issues and his wife has been active with Citizens for a Better Environment, one of the state's largest environmental organizations. The Mayor is also an advocate of new urbanism and has a coherent philosophy regarding the role of planning in making the city more liveable (Box 9.1).

Norquist has even expressed personal interest in the issue of climate change. In 1997, he sent a letter to the state's Senate delegation urging them to support a strong US position in the *Kyoto Protocol* negotiations, arguing that:

> This upcoming round of negotiations is extremely important. It could enhance air quality and reduce the long-term threat inherent in climate change to Wisconsin agriculture, tourism, health and economic development.
>
> Norquist 1997

**Box 9.1: The CCP programme and community liveability (from ICLEI 1998)**

ICLEI emphasizes 'community liveability' as one of the co-benefits for cities participating in the CCP programme. Reducing greenhouse gas emissions contributes not only to the mitigation of climate change but also addresses other community concerns. According to ICLEI, measures to reduce greenhouse gas emissions enhance the quality of life in CCP communities. Thanks to improvements in air quality, citizens enjoy better health, and greater energy efficiency in homes and offices provides more discretionary income. In addition, reducing greenhouse gas emissions may lead to a strengthened sense of community as development patterns begin to place people in closer proximity with their work, schools and services.

Although Milwaukee was one of the first American cities to sign up to the CCP programme, no meaningful connection between the local authority and the network exists. The City has not adopted the CCP milestone approach, and the City Council (known as the 'Common Council') has never passed a resolution or even engaged in a debate about climate protection and setting greenhouse gas reduction targets. Milwaukee does not routinely monitor its greenhouse gas emissions or report on efforts to control those emissions. Moreover, there is no one within the municipal government responsible for climate protection. Initially, the Environmental Policy Co-ordinator served as the liaison between the City and the CCP programme. However, the individual who held that position left the government in 1996 and this position was subsequently eliminated. The Co-ordinator was a political appointee,[2] and as a result the position had been highly politicized, resulting in difficulties in promoting any environmental agenda, let alone climate protection. City officials have not attended CCP workshops or conferences. In essence, the connection between the City of Milwaukee and the CCP programme is 'closed' (see Chapter 12).

There are isolated examples of climate-friendly initiatives within Milwaukee's municipal government, particularly by the Public Works Department, although none of them is explicitly linked to the goal of climate protection or reducing greenhouse gas emissions. Many of these initiatives focus on managing energy use (see Chapters 7, 8 and 10). For example, the Buildings and Fleets Division has begun an effort to increase the use of alternative-fuel vehicles (e.g. vehicles that do not run on fossil fuels) in the municipal fleet, to retrofit municipal buildings with more efficient lighting systems, to switch to a district cooling system that would use chilled water to cool city buildings and to retrofit street lights. In addition, the City included numerous energy efficiency measures in its renovation of City Hall (ICLEI 1998). Milwaukee is also a partner in the *Energy Star* programme, a federal initiative jointly run by the Environmental Protection Agency and

the Department of Energy to promote energy-efficient products (see Chapters 3 and 8). In the area of waste management, Milwaukee achieves greenhouse gas emissions reductions through its recycling programme, through which the city recycles 27 per cent of its garbage.[3]

Officials promoting such initiatives in Milwaukee face considerable obstacles. For example, on the issue of alternative-fuel vehicles, Milwaukee's fleet managers prefer propane to natural gas because it requires less change in infrastructure, but they have found that propane-powered vehicles have start-up problems in cold weather (a serious problem given Milwaukee's climate). Moreover, the City's fleet consists primarily of heavy equipment, including garbage/recycling trucks, dump trucks and snow ploughs, for which there are no alternative-fuel options available, so that existing technologies are of limited utility in Milwaukee. This example illustrates that proven technologies or best practices may not be readily transferable between different places. Progress in promoting energy conservation and efficiency has also been slowed by disagreements about how to fund such initiatives. While investment in energy efficiency and conservation measures may pay for itself through future savings, it often involves considerable up-front costs. To date, the Common Council, which has control of the City's budget, has not been receptive to using future savings to pay for current investment. Departmental managers, who are given a budget allocation each year and the freedom 'to choose any strategy they wish to meet their allocations' (Norquist 1998: 37), must make cuts elsewhere in order to free up funds for new projects. Given that there has not yet been an effort to calculate the cost-savings of energy efficiency and conservation measures (let alone their effect on greenhouse gas emissions), departmental managers have little incentive to make significant amounts of new funds available. Thus, energy efficiency and conservation measures are being integrated into municipal operations slowly and in a piecemeal fashion, which is much less cost-efficient and effective in the long run.

Milwaukee's urban forestry programme is the only initiative within the municipal government with explicit reference to climate protection. According to a 1996 study by American Forests, an NGO dedicated to US forestry issues,

> Milwaukee's urban forestry management is widely regarded as one of the nation's best for publicly maintained trees. The Forestry Division of the Department of Public Works has developed an efficient approach to planting, care and maintenance. Trees are considered part of the streetscape and planting costs are included when street capitol improvements or repairs are made. … The expertise that exists in city government offers it an opportunity to utilize the tree canopy on both public and private property as an environmental or public service.
>
> American Forests 1996: 4

This study serves as the foundation for Milwaukee's current forestry programme, which emphasizes tree-planting on both public and private property. The City allocates more than $7 million each year to its urban forestry programme. The Division of Forestry also co-ordinates the *Greening Milwaukee* programme, a non-profit initiative designed to increase the number of trees on private property in the community. This programme is funded with a $100,000 grant from the Wisconsin state legislature.

The division justifies its urban forestry and *Greening Milwaukee* programmes in terms of their public safety and environmental benefits. Each year, it spends considerable time picking up debris after storms and pruning trees on a regular basis. In addition, the

division emphasizes that trees can help mitigate the impacts of storms. Beyond public safety goals, the City highlights the environmental effects of its forestry programme, including reduced storm water flow and improved air quality (City of Milwaukee 1997). In addition, the City notes the role of trees in reducing greenhouse gas emissions by lowering energy use and absorbing carbon dioxide. When properly placed, trees shade buildings and reduce the need for air-conditioning. According to American Forests (1996: 17), trees with the highest energy rating 'are at least 35 feet tall, have a full, dense crown and are located within 35 feet of the west wall, usually shading a window or air-conditioner'. The cooling effect translates into lower demand for air-conditioning, leading to lower levels of energy production and fewer greenhouse gas emissions. Trees also act as carbon sinks: through the process of photosynthesis, trees remove carbon dioxide from the atmosphere. American Forests estimate that Milwaukee's trees sequester 1,521 metric tonnes of carbon annually, a figure that could be increased to 4,349 metric tonnes annually by increasing urban tree cover.

Despite its explicit consideration of global climate change, the Division of Forestry highlights the local, rather than global, effects of its programmes. For example, it claims 'trees improve air quality by absorbing carbon dioxide …' (City of Milwaukee 1997). This, of course, is a bit misleading since carbon dioxide does not contribute directly to local air pollution. To the extent that trees lower energy use, they improve air quality since the fossil fuel combustion that produces electricity generates other pollutants besides greenhouse gas emissions that do affect local air quality, including tropospheric ozone, nitrous oxides and sulphur oxides (STAAPA-ALAAPCO 1999). However, this strategy is consistent with the CCP programme's effort to 'localize' climate change by reframing a problem that is generally viewed as a global issue in a way that makes it meaningful to local decision-makers. Nevertheless, although climate protection and greenhouse gas emissions abatement are clearly integrated in Milwaukee's urban forestry programme, it is important to note that there is no relationship between this and the CCP programme or a broader climate protection effort. When asked, the City's foresters did not know of Milwaukee's involvement with the CCP programme; in fact they had never even heard of ICLEI. Rather, their interest in the role of urban forests in carbon sequestration has been fostered by participation in urban forestry networks and linkages to non-profit organizations such as American Forests, suggesting that there is a need to develop stronger ties between networks that promote common ideas. Moreover, there is little effort to work across the city government to promote goals related to mitigating climate change since environmental protection is not formally part of the division's mandate. In effect, even when there was an Environmental Policy Co-ordinator, the forestry programme has worked in relative isolation from other parts of the municipal government.

Overall, we find no evidence that the CCP programme has influenced policy-making in the City of Milwaukee. In most areas of municipal policy with implicit links to climate protection, such concerns remain external to policy development. Where there is an explicit link to climate protection (in the urban forestry programme), this has not been fostered by connections between the City and the CCP programme. The case of Milwaukee demonstrates the significant institutional barriers faced by municipal governments attempting to engage with the CCP programme and promote climate protection. Where a city's participation is based on the interest of one or two individuals, its success is linked to the ability of those political champions to exert leverage within the municipal government and have climate protection institutionalized in everyday operations.

Controlling greenhouse gas emissions requires co-ordination across city government, involving officials working in waste management, transport, public works, utilities, health, land-use planning and air quality management, to name a few. However, officials working in these areas of city government rarely sit at the same table since most city governments are divided into a few specialized departments and divisions with very specific mandates. Officials focus on their narrow tasks, often with little interaction with individuals in other divisions or departments. Milwaukee experimented with an Environmental Policy Co-ordinator, whose purpose was to develop linkages between departments and divisions and integrate climate protection (as well as other environmental concerns) across the city government. However, the position was not particularly effective, largely because it had no permanent home and, more importantly, no institutional support. Milwaukee does not have an environmental department or division. Rather, the Environmental Policy Co-ordinator has been housed at various times within the Department of Administration, which primarily serves as the City's budget/policy analysis office, and the Department of Public Works, which oversees road maintenance and repair, the City fleet, waste disposal and the general operation of municipal facilities. In neither case was environmental protection (let alone climate protection) a high priority. The lack of commitment from these departments deprived the Environmental Policy Co-ordinator of any sort of power base from which to promote the CCP agenda. Moreover, the fact that the Co-ordinator was a political appointee further undermined his credibility and made it difficult for the individual holding this position to work across city government.

Since climate protection was never embraced by any part of the municipal government, but rather remained part of the portfolio of one particular individual, Milwaukee's involvement in the CCP programme was extremely vulnerable to personnel changes. When the individual holding the Environmental Policy Co-ordinator position left the City and the position was subsequently eliminated, there was no one left to carry on the climate protection agenda. Even if the individual had remained, participation in the CCP programme requires much more than a one-person operation. The CCP milestone approach relies heavily on collecting and analysing data on greenhouse gas emissions and monitoring climate protection initiatives. Officials responsible for climate protection must not only have the time to gather such data (which is not always readily available), but also the technical expertise to work with the CCP software and analyse the results. In addition, achieving the goal of reducing greenhouse gas emissions requires action across city government, including in the planning process, and is thus beyond the capacity of any one individual. In the next section, we consider the relationship between planning, urban sustainability and climate protection, focusing on Milwaukee's experience in applying the principles of new urbanism to its planning strategy.

## Planning, urban sustainability and climate protection

Under the leadership of Mayor Norquist, Milwaukee has sought to promote sustainability through the planning process. Like other advocates of new urbanism, he favours planning strategies that promote high-density development, and emphasizes the importance of regenerating urban areas to create a stronger sense of community, which he views as the key to unleashing the 'power of cities' (Norquist 1998: 203). Milwaukee's experience with new urbanism demonstrates both the opportunities and constraints that arise in using land-use planning as a vehicle for controlling greenhouse gas emissions.

### *Planning and the challenge of sprawl*

In the US, all 50 states have delegated land-use planning to local authorities, although there is variation in the extent to which local authorities have autonomy in this area since many state and federal policies also shape land-use patterns in urban areas. A number of states have created state-wide development plans (15) and/or established regional planning bodies (45) that mandate standards for local land-use planning (GAO 2000). The state of Oregon is often held up as one of the leaders in the development of state land-use strategies. In 1973, the state legislature passed the *Land Conservation and Development Act*, which required local jurisdictions to establish urban growth boundaries that would accommodate expected growth over the next 20 years (Lewis 1996; Sierra Club 1999). Wisconsin has mandated comprehensive planning standards and provides funds for local governments to develop such plans (GAO 2000). Federal environmental regulations, such as the *Clean Air Act*, require urban areas to control growth and land-use so as to meet required standards. Most cities have a planning department and/or local planning commission that make decisions regarding land-use within municipal boundaries. Responsibility for land-use planning in Milwaukee is divided between the City Plan Commission and the Planning Division within the Department of City Development. The City Plan Commission, which consists of seven members appointed by the mayor, serves as the City's official planning body as mandated under state law and acts as an advisor to the Common Council on matters related to land-use. In addition to providing administrative support to this body, the Planning Division is responsible for preparing and maintaining the City's comprehensive plan as well as plans for seven areas within the city (MDCD 1999a).

Historically, the overriding objective of the planning process in the US was to stimulate economic development. Traditionally, planning bodies sought to plan for, and control, development through land-use plans and zoning regulations that designate particular areas of the city for specific purposes (GAO 2000; Grant and Omdahl 1993). In most cities, zoning ordinances set aside large areas of land for residential, commercial or industrial use, with little flexibility; typically there has not been an emphasis on establishing mixed-use areas, thus urban residents frequently have to travel several miles between home, work and commercial/recreational areas. A significant rethinking of the role of planning has been prompted by the suburbanization of America. Beginning in the 1920s, Americans began moving out of the cities, hoping to escape the crime, excessive noise and pollution. This movement was facilitated by the development of the car. A new wave of migration from the central cities began in the 1950s. The federal government provided low-interest loans, which enabled many Americans to purchase their first homes in the suburbs (Grant and Omdahl 1993). Movement from the cities was further facilitated by the mass production of cars (which made them more affordable for the middle-class) and a federal highway programme that increased road capacity and enabled individuals to travel longer distances between home and work (Straayer *et al.* 1998). Retail stores, employment centres and leisure facilities have since followed (Bowman and Kearney 2002). As individuals move outside city boundaries, new jurisdictions are created, which then have authority over land-use planning. In a single metropolitan area there may be dozens of planning authorities, often with conflicting interests (Straayer *et al.* 1998). To overcome this problem, some cities, such as Portland, Oregon, have created metropolitan districts to co-ordinate planning strategies (Grant and Omdahl 1993; Lewis 1996; see also Chapter 4).

A by-product of suburbanization in the US is sprawl: low-density development that is often characterized as consisting of 'tragic boulevards of commerce' (Kuntsler 1996) and 'cookie-cutter' housing developments (NRDC 2002). Sprawl consumes vast amounts of land. In Denver, for example, the population grew by 15 per cent between 1990 and 1996, while developed land area increased by 65 per cent in the same period (Bowman and Kearney 2002). Among the problems associated with sprawl are the economic costs of extending infrastructure over a larger area, traffic congestion and a disrupted sense of place (EPA 2001c; Froelich 1998; NRDC 2002; SGN 2002a). Car dependence, which is intensified with sprawl, also carries economic costs. In a study of sprawl in Memphis, Tennessee, Ciscel (2001) argues that it results in lost labour income of $4.9 million per day since commuters must spend significant amounts of time in traffic. In Milwaukee, Norquist (1998) reports that 50 per cent of the municipal levy (taxes) is devoted to the direct costs of cars, including road construction and maintenance, signage, police patrols and streetlights. Sprawl is also associated with a number of environmental problems, including air and water pollution and the loss of open space and farmland. For example, because individuals must drive longer distances for work, shopping and recreation, this creates higher levels of pollutants entering the atmosphere, including greenhouse gases (NRDC 2002; SGN 2002b). According to the Sierra Club (2002), sprawl contributes to the destruction of more than 100,000 acres of wetlands each year, leading to higher levels of water pollution and increased risk of flooding.

### *New urbanism and sustainability*

Since the 1970s, the urban planning process in many US cities has shifted away from a focus on promoting growth to one of managing growth to address problems associated with sprawl.[4] One initiative developed in this context is new urbanism, a design movement that emerged in the late 1980s in the US, which emphasizes the role of land-use planning in creating a sense of community and addressing the negative impacts of development (Zimmerman 2001). According to the Congress for the New Urbanism (1998), new urbanism is based on the following principles:

- Neighbourhoods should be diverse in use and population;
- Communities should be designed for the pedestrian and public transport as well as the car;
- Cities and towns should be shaped by physically defined and universally accessible public spaces and community institutions;
- Urban places should be framed by architecture and landscape design that celebrate local history, climate, ecology and building practice.

New urban developments are characterized by homes with front porches, sidewalks, green public spaces and retail development in close proximity to residential development. New urbanists believe these features allow for greater interaction between individuals, leading to a stronger sense of community in urban areas.

Milwaukee's Mayor John Norquist is firmly committed to the principles of new urbanism. He sits on the board of the Congress for the New Urbanism, makes numerous speeches on the subject and devoted an entire chapter of his book, *The Wealth of Cities*, to the movement. Norquist views new urbanism as a mechanism for revitalizing cities and enabling them to capitalize on their 'natural advantage':

> Their physical properties – scale, proximity and diversity – are their chief advantage. The benefits that accrue where large numbers of diverse people live and work closely together include the most efficient results in transportation, labor exchange, consumption, capital allocation, culture and education.
>
> Norquist 1998: vii

Norquist has integrated the principles of new urbanism into his administration. In 1999, Norquist appointed Julie Penman to serve as the Commissioner of the Department of City Development. According to her biographical profile, Penman is 'considered an expert in the fields of property tax administration as well as economic development and new urbanism' (MDCD 2002a). The principles of new urbanism are also visible in the City's planning documents. For example, the 1999 *Milwaukee Downtown Plan* states its goal is to 'create a more vibrant, active, and exciting place to live, work, learn, and play', and proposes to achieve that goal by increasing the amount and variety of downtown housing, expanding the number and variety of entertainment venues in the area, maintaining the concentration of offices and by providing multiple transport options (with particular emphasis on enhancing the pedestrian environment) (MDCD 1999b). The Planning Division is guided by a set of design principles, including neighbourhood compatibility, pedestrian-friendly design, land-use diversity and transportation choice, that are clearly rooted in new urbanism.

> Coordinated planning and development effectively integrate many elements. Quality housing that enhances a sense of community among neighborhood residents; attractive customer-friendly commercial streets; greenspace offering recreational amenities and a diverse array of transportation options represent only a few of the many elements that, when well designed, contribute to good urban form. Milwaukee must promote urban design practices that emphasize the public qualities of buildings and creation of places with lasting value and civic meaning.
>
> MDCD 2002b: Introduction

Proponents of new urbanism often link its underlying goals with those of sustainability, in particular the need to achieve a balance between economic development, environmental protection and social equity (EPA 2001c; Zimmerman 2001). This assumption that economic, environmental and social objectives can be achieved simultaneously is implicit in Milwaukee's planning documents. As articulated in the *Brundtland Report* and LA21, new urbanists view cities as an arena in which the objectives of sustainable development can be achieved (see Chapter 2). New urbanism is not anti-growth; rather, its focus is on encouraging thoughtful debate on how and where new development should occur. New urbanists believe that policies and planning strategies based on its principles 'are the best way to reduce how long people spend in traffic, to increase the supply of affordable housing, and to rein in urban sprawl' (CNU 2002a). In other words, they assume that local authorities have the ability to make choices that reduce a city's impact on the environment and promote the development of win–win solutions that simultaneously meet economic, environmental and social objectives.

Likewise, and consistent with the trend towards new localism (Chapter 2), Milwaukee's planners start with the belief that desired outcomes (sustainability) can be achieved through the application of particular policy measures consistent with these principles. In terms of environmental protection, new urbanism is premised on the assumption that

high-density development in cities is better than the low-density development found in suburban areas (see Chapters 5 and 10). Norquist (1998: 140) argues that people often fail to appreciate 'the value of cities in absorbing human activity that would otherwise spread over and degrade the natural landscape'. New urbanists claim that smart growth addresses environmental problems by emphasizing high-density, mixed-use communities that encourage walking and provide transportation choice. For example, if people live in close proximity to their work, schools and shopping areas, they will drive less, thus reducing air pollution associated with emissions from cars (EPA 2001c; SGN 2002b). However, as we discuss below, the process of translating new urbanist principles into practice is far from straightforward. The relationship between land-use planning, transport and environmental protection may be more complex than is suggested by new urbanists (see Chapters 2 and 6), and the process of implementing new urbanist projects often requires trade-offs between economic, environmental and social objectives.

### *New urbanism in Milwaukee*

In Milwaukee, new urbanist principles have guided a number of development projects in the past decade. For example, the City has renovated the area around the Milwaukee River, which had become highly polluted by the heavy industry that was once the backbone of the city's economy. The Riverwalk is now a major attraction for city residents and visitors alike (Figure 9.1). Plans for the next phase of development call for enhancing pedestrian links to other areas nearby, giving citizens greater choice in the means used to travel between destinations in the downtown area. Consistent with the principles of new urbanism, planning for the area incorporates the need for open space. The plan suggests that 'future extensions of the Riverwalk [will] provide opportunities for more urban parks and a dynamic relationship to the water' (MDCD 1999b: 34). It is notable that within the plans for the Riverwalk area, the environment is considered mainly in terms of its aesthetic value and contribution to the quality of life of area residents and visitors, rather than in any wider sense.

Another project involves demolishing the Park East Spur, an elevated, unused piece of freeway that is a remnant of an abandoned plan to circle downtown Milwaukee, which officials feel creates a physical barrier between neighbourhoods nearby (Figure 9.1). Norquist has been a critic of the tendency to pave over areas within cities to accommodate growth. In a 1999 Sierra Club newsletter, he contended that '[w]idening roads to solve traffic congestion is like loosening your belt to solve a weight problem'. The Park East Spur project is an effort to reverse this trend. The plan calls for redevelopment of 20 acres covered by the spur as well as a number of public transport projects designed to enhance connections to downtown (MDCD 2002c). The plan also contains numerous elements of new urbanism. It emphasizes the development of mixed-use buildings with retail/office space on the ground floor and residences above and the enhancement of pedestrian connections to the nearby Riverwalk area. Two new parks on either side of the river are also proposed, deemed necessary 'because many residences in the north section of the city can not access an open space within a five-minute walk' (MDCD 1999b: 24).

The City is also working to redevelop the Menomonee River Valley, which historically served as Milwaukee's industrial hub (Figure 9.1). Today, it has largely been abandoned and sits as a vast 'brownfield' site in the city. In close co-operation with local businesses, and with funding from the federal government as well as the state of Wisconsin, the City

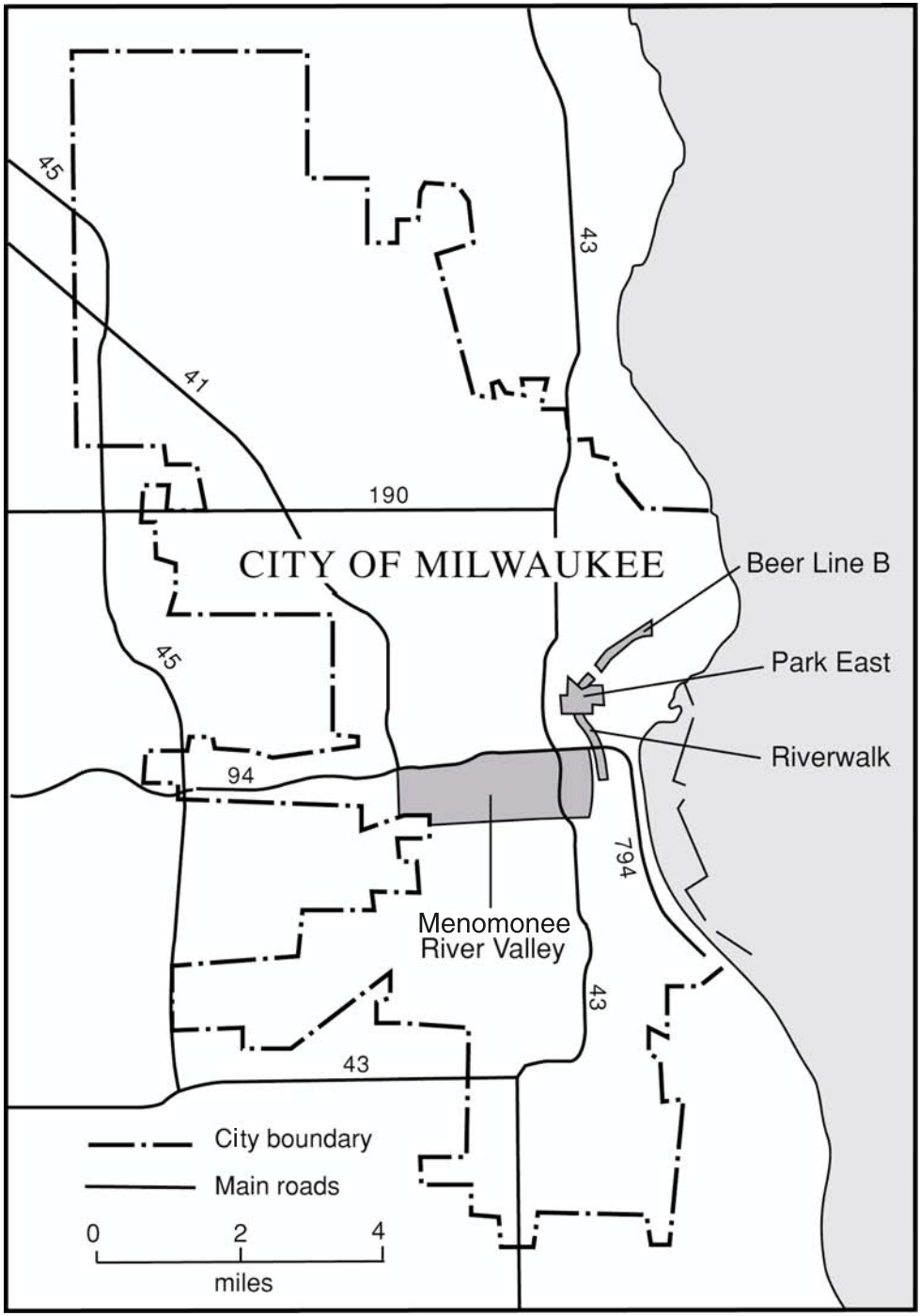


*Figure 9.1* Map of the City of Milwaukee, showing four development areas

has developed a plan for the rejuvenation of the valley that calls for compact, mixed-use development, provision of alternative transport and the preservation of open space (MDCD 2001). The plan requires a revision of the City's zoning ordinance, which classifies the entire area as 'industrial'. In the new *Valley Plan*, officials argued that '[t]his permissive classification has allowed uses that detract from the environment and physical appearance of the area, thereby discouraging new development. A single zoning classification is also inadequate to provide for the different types of uses that are best suited to the different sections of the Valley' (MDCD 2001). In another former industrial area known as 'Beer Line B' (Figure 9.1), a 1999 development plan provides guidelines for future private development (MDCD 2002d). As well as providing for hundreds of new housing units, the plan calls for improving the area's public infrastructure, enhancing recreational space and increasing access to the river and adjacent neighbourhoods. In addition, the City has sought to attract large retail outlets to the neighbourhood so that residents will not have to travel to the suburbs to do their shopping.

Rather than serving as a straightforward means for implementing sustainable development, each new project has required Milwaukee officials to debate the meaning of sustainability and the relationship between economic, environmental and social objectives. Documents relating to the Menomonee River Valley Development suggest that officials sought to achieve a balance between economic, environmental and social objectives. According to its website, the Menomonee Valley Partnership envisions:

> a redeveloped Valley that is as central to the city as it was in the past: geographically central, with new ties to the surrounding neighborhoods; economically central, with strong companies that provide jobs near workers' homes; ecologically central, with healthy waterways and greenspace; and culturally central, with recreational facilities for the community.
>
> MVP 2002

However, achieving this balance, at least in the planning stage, required the inclusion of a number of principles that expand or go beyond the ideals of new urbanism. For example, the plan calls for poverty reduction through economic development efforts 'targeted to reducing poverty by promoting jobs that match the skills of existing residents, improving the skills of low-income individuals, addressing the needs of families moving off welfare, and insuring the availability in all communities of quality affordable child care, transport, and housing' (MDCD 2001).

It is less clear that a balance between economic, environmental and social objectives has been achieved in the case of the 1999 *Downtown Plan*. In this case, the planning process seems to have been driven by the desire to unleash the city's economic potential, with little consideration of environmental and social objectives. Of the Plan's seven goals, five are clearly designed to enhance the level of economic activity in the downtown area (MDCD 1999a). They focus on the need to bring people to the area through increased residential development, destination entertainment venues and office development so as to 'increase weekday and weekend [economic] activity throughout downtown'. The Plan also recognizes that 'some projects have the potential to encourage additional investment or provide downtown with a marketing advantage. These projects should receive special recognition and support'. The Plan's objectives make no explicit reference to social or environmental objectives. For example, in the discussion of the need to increase the amount and variety of housing in the downtown area, there is no mention of issues of

affordability. Nor is there discussion about attracting jobs appropriate to the skills of the area's residents. During the planning stage (which involved stakeholder participation),

> [p]articipants filled in nearly all the vacant and underdeveloped space on the base map with buildings. Rather than create new large areas of open space, the teams emphasized enhancing the existing streets with trees and plantings. Small parks were provided to complement new housing developments. Participants welcomed facilities such as sport, cultural and entertainment venues that attract visitors to downtown and add evening and weekend activity.
>
> MDCD 1999a: 7

Similarly, recommendations regarding transport focused on improving access to areas of economic activity rather than reducing environmental effects generated by activities in this sector. In the *Downtown Plan*, the environment is treated as a local amenity, a part of the package to attract people to the downtown area to engage in economic activities.

Critics of new urbanism have challenged its commitment to sustainability, arguing that it privileges some objectives over others. Gordon and Richardson (2000: 115) suggest that the movement focuses on 'preserving resources for future use', often at the expense of addressing 'today's problems of poverty and inequality'. In other words, by privileging environmental protection for future generations over social equity for those alive today, they argue that new urbanism fails to create a win–win solution between economic, environmental and social objectives. In contrast, Zimmerman (2001: 250) argues that new developments built on new urbanist principles 'may be less about the conservation of resources and the environment and more about the conservation of suburban privilege and the suburban lifestyle'. The Congress for the New Urbanism rejects such characterizations and notes that its principles can be used to overcome segregation between rich and poor by encouraging a range of housing types to be developed in a single area and by improving the quality of life for low-income people through enhanced infrastructure as well as greater access to employment, shopping and recreation (CNU 2002b). Once again, new urbanism can be seen as consistent with the notion of new localism in that it assumes a linear and rational policy process whereby technocratic policy measures can be applied in a top-down fashion so as to achieve desired goals at the local level. However, Milwaukee's experience highlights the danger in conceptualizing new urbanism as a universal model for achieving sustainability. Failure to acknowledge the specific needs of a particular neighbourhood, city or region will make it difficult to simultaneously address economic, environmental and social concerns. As Guy and Marvin (2000: 9) caution, the 'search for a simple and universal model of sustainable urban form can blind researchers and policy makers to the multiplicity of innovations that could each make a quite distinctive contribution towards the development of more sustainable urban futures'.

### *New urbanism and climate protection*

While new urbanism has the potential to contribute to urban sustainability, a general notion of urban sustainability may be a necessary, but not sufficient, precursor for climate protection, which requires an explicit focus on the transport and energy sectors. If new urbanism is to contribute to climate protection, it must stimulate a modal shift in transportation patterns and/or reduce demand for transport as well as lower electricity consumption, since transport and energy production for electricity are the most significant sources of green-

house gas emissions in the US (see Chapter 8). Turning to the issue of transport planning first, there is a great deal of controversy over the relationship between land-use planning and transportation patterns. New urbanists claim that suburban residents spend more time in their cars commuting to work and going shopping. In contrast, critics note that many employers, as well as large retail outlets, have followed workers and shoppers to the suburbs. Much of the subsequent driving occurs between suburbs rather than between suburbs and urban areas. Urban residents may actually have to drive longer distances than their suburban counterparts and thus may make larger contributions to air pollution and greenhouse gas emissions (Banister *et al.* 1997; Green 2001). Again, the challenge for new urbanists is to pay close attention to these challenges as they translate the movement's design principles into practice in different places at different times. As discussed above, Milwaukee's planners have sought to attract employers and retail outlets back to the city centre to reduce the need for urban residents to travel to the suburbs on a daily basis. Nevertheless, it is important to recall that the relationship between reducing physical distances and reducing the propensity to travel are too often taken for granted. While it is clear that land-use and transport are related, there are no simple models of causality (Headicar and Curtis 1998; Owens and Cowell 2002). Rather the relationship between planning and transport must be worked out based on a local authority's particular circumstances.

Given that energy use is dependent on both the form of urban development, that is, its location and density, as well as its design, planning can be a means to promote more environmentally benign forms of energy supply and use (see Chapter 5). However, it is also important to note that new urbanism says little about whether new buildings should integrate energy efficiency technology, how they might be placed to take advantage of passive solar energy and/or how planning might be linked to sources of electricity. In Milwaukee's planning documents, there is little consideration of the relationship between design and energy use, calling into question the ability of land-use planning to contribute to climate protection in a straightforward manner. High-density development without explicit attention to energy use and production could potentially result in higher levels of greenhouse gas emissions. It is possible that other models of planning may better promote gains in energy efficiency than the compact urban form advocated by new urbanists, particularly in light of the unique constellation of actors and interests in a given setting (Guy and Marvin 2000).

Land-use planning based on the principles of new urbanism alone is insufficient to achieve urban sustainability and climate protection. Ultimately, achieving these goals requires consideration of the social, political and economic context in which local authorities operate. While new urbanism has the potential to serve as a mechanism for achieving sustainability and climate protection objectives, this is only to the extent that planners adapt new urbanist principles to suit the particular context and address key sectors. However, the ability of planners to make such adjustments may be limited by other factors, including the necessity to work across levels of government. According to the Smart Growth Network:[5]

> Putting the smart growth principles into action requires changes to the way communities function. It requires that local governments, lenders, community groups, zoning officials, developers, transit agencies, state governments, and others agree to a new way of doing business.
>
> SGN 2002a: ii

Norquist (1998) notes that many state and federal policies work against sustainability by encouraging people to disperse across large areas, which in turn leads to an inefficient use

of resources. One of the most problematic policies has been the federal highway programme. Not only do highways push people to the suburbs, but they also serve as physical barriers, dividing neighbourhoods, isolating individuals and interfering with the dynamics of the city. In Milwaukee, there is a division of authority over public transport that must be addressed in order to provide transportation choice within the city. The City determines the location of bus stops, while the county runs the bus service and determines schedules. City officials have focused primarily on revitalizing the city centre through the application of new urbanism, with little reference to planning in the outlying areas that make up the metropolitan area. Any gains achieved by the City of Milwaukee in terms of controlling its own greenhouse gas emissions will be offset if the suburbs surrounding Milwaukee fail to control their own growth and stem demand for energy and transport.

Whether new urbanism can serve as a mechanism for promoting sustainability in general, and climate protection in particular, in Milwaukee depends in part on the City's long-term commitment to its principles. The City's commitment to new urbanism is clearly linked to the political leadership of Mayor Norquist. As a proponent of new urbanism, he has appointed a plan commission and a head of planning division that are supportive of the movement's principles. This has resulted in changes in how land-use is managed in the City, both through the planning process and in zoning ordinances. It remains to be seen whether this shift has been sufficiently institutionalized within the practices of Milwaukee's government to survive when Norquist and his political appointees leave office.

## Conclusion

The CCP programme has had little effect in Milwaukee. The City has not taken up the milestone framework and climate protection has not been integrated across the government. This case demonstrates the ways that the lack of a political champion coupled with other institutional barriers inhibits the ability of local governments to achieve climate protection via the CCP programme. Since 1996, no one within Milwaukee's government has been willing to take the lead on climate protection. As noted in Chapter 8, successful implementation of the CCP framework requires an individual who is 'passionate' about climate protection. While leadership is clearly important, it is not sufficient for the uptake of the CCP programme. The individual co-ordinating climate protection must have institutional support from which to promote initiatives to reduce greenhouse gas emissions. In Milwaukee, the political nature of the Environmental Policy Co-ordinator position, the lack of any permanent institutional home and the method of making budgetary decisions all inhibited the ability of the City to integrate climate protection into its operations.

In general, the officials within Milwaukee have sought to promote their environmental agenda through other activities, such as planning. Mayor Norquist views land-use planning based on the principles of new urbanism as a way to enhance environmental quality and sustainability more generally within the city. While the City has adapted the principles of new urbanism so as to enhance its ability to achieve the goal of sustainability, it is less clear that Milwaukee's approach to planning will contribute to climate protection. Neither the rhetoric of new urbanism nor its application in Milwaukee address energy use in the built environment sufficiently to stem emissions from this sector, and it is unclear whether measures to reduce the need to travel will result in a reduction in the propensity to travel. We return to the implications of these findings for local initiatives to address climate change, and the CCP programme in particular, in the concluding chapters of this book.

# 10 Newcastle, New South Wales

## Win–win solutions for climate protection?

During the 1990s, Newcastle City Council became the leading local authority in Australia with respect to local action on climate change. Newcastle is the second largest city in New South Wales (NSW), Australia, and part of the Greater Sydney metropolitan region. Like other cities around the world based on manufacturing, coal and port activities, it has undergone several recessions in the last two decades, during which many traditional industries have closed and unemployment has grown. In trying to re-invent itself for the post-industrial world, Newcastle has concentrated on selling its place in the Hunter Valley, a world-renowned wine-making region, as a tourist destination in its own right. Towards this end, considerable effort has been spent on re-developing downtown areas, with an emphasis on the preservation of heritage and the promotion of a new service economy. Central to this process of re-invention has been the need to escape from the image of Newcastle as a declining, dirty industrial town, which suffered from comparison with its more glamorous neighbour, Sydney (Stevenson 1999), towards a new 'clean and green' city, on the cutting edge of the development of sustainable technologies. The first section of this chapter describes how climate protection policy evolved in Newcastle and the Council's role in the initiation of the national CCP programme in Australia. We then turn to examine how measures to reduce emissions of greenhouse gases have been implemented in Newcastle in the wake of the CCP-Australia programme. We argue that although the Council has been successful in addressing its own emissions of greenhouse gases, the challenges faced in implementing climate protection measures across the city remain considerable. By way of conclusion, we consider the importance of the CCP programme in the development of local initiatives to address climate change in Newcastle, and the implications of our findings for understanding global environmental governance.

### The local–global politics of climate change

The Australian electricity production sector is dominated by coal-fired generation, which accounts for over 80 per cent of all electricity produced, the remainder being supplied by gas-fired power stations and large-scale hydro-electricity projects (ACA 1996). The dominance of coal reflects both its abundance as a resource within Australia and the political influence of the coal and resource-processing industries, which have made the production of cheap energy a political priority. While Australia, like the rest of the world, experienced increases in energy prices during the 1970s, state subsidies and the continued provision of infrastructure to meet growing demands for energy have ensured that electricity costs remain relatively low. In this context, investment in the research and development of energy efficiency or renewable sources of energy, and the employment of demand-side management,

has been minimal (Gilchrist 1994). For local governments, cheap energy and the absence of the type of social problems surrounding fuel poverty found in the UK, have meant there has been little incentive to address the issue of in-house or community energy management. However, during the late 1980s and 1990s the idea of ecologically sustainable development was taken up by federal, state and local governments in Australia (Downes 1996; Papadakis 1993), and with it the rationale that energy efficiency could have benefits both for the environment and for the economy. Newcastle's engagement with energy efficiency issues dates back to 1990, when the concerned manager of the City Works department noted the high levels of expenditure on electricity within his department and began a process of replacing inefficient heating and lighting systems. This led to further energy efficiency initiatives within municipal buildings, the profile of which was raised by the necessity of making financial savings within the Council and by the development of LA21 in Newcastle. The *Newcastle Environmental Management Plan* (NCC NSW 1995), the city's LA21 strategy, includes the following commitment to local action on climate change:

> Newcastle will take a leadership role to minimise greenhouse gas emissions and assist in meeting the National interim planning target to reduce $CO_2$ emissions by 20% by the year 2000.
>
> NCC NSW 1995: paragraph 1.4

The rationale for this commitment was seen to be: the high rate of per capita emissions of greenhouse gases in Australia; the need to be part of the national effort to address climate change set out in the NGRS (Commonwealth of Australia 1992);[1] and the need to take into account the possible impacts of climate change when planning urban and coastal development (NCC NSW 1995). Furthermore, local government was seen as an important demonstration site for exploring the possibilities of acting on climate change:

> Newcastle's efforts to reduce greenhouse gas emissions alone will have a negligible impact on the global scale. However, where strategies adopted and proven in Newcastle are taken up at the regional, state and national level the scenario will change and this is the principle purpose of Newcastle taking a leadership role.
>
> NCC NSW 1995: paragraph 1.4

The *Newcastle Environmental Management Plan* included several suggestions for actions which could be taken by Newcastle City Council to address climate change, including measures which seek to change state and federal policy, and to address emissions of greenhouse gases from across different sectors (NCC NSW 1995). However, given the success of previous in-house energy efficiency schemes, the initial focus of action was on measures which could be taken within the City Council. In 1995, the Environmental Management Department began to co-ordinate further energy efficiency measures under the 'green energy project'. This involved the creation of an inventory of energy use and costs and establishing a fund, based initially on a loan from the council, for implementing various schemes. Any financial savings made from these measures are used to pay back the loan, and to fund new projects. Since this co-ordinated approach was adopted, significant savings and re-investments have been made:

> Our million dollar account from 1995 is now A$650,000 … we've invested A$400,000 dollars since then and we've made a A$600,000 dollar cumulative saving,

> so the savings are racing ahead of the investment, which if a little old council can do, I think that means that anybody can do it. And half of the A$400,000 went into labour, just for electricians, and that's a job for 3.9 years, if you add up the 6,600 hours, so there's a lot of jobs and a lot of money savings … as an outcome from reducing emissions.
>
> Interview, Environmental Management/AMEIF Newcastle City Council, July 1999

In this approach, like the CCP programme, emphasis is placed on climate protection measures which are win–win, creating financial savings, local jobs and reducing emissions of carbon dioxide simultaneously. In addition, the revolving fund has allowed the Environmental Management Department to invest in a range of schemes which would not have been possible through normal local authority finances, including further energy efficiency measures and the development of renewable energy demonstration projects. One of these is the Illumination Newcastle project, where renewable energy demonstration projects have been used to light historic monuments in the city. The first of these was the installation of a wind turbine at the entrance to Newcastle harbour in 1995, which was then used to light Fort Scratchley, also located at the harbour entrance (Figure 10.1). This had particular symbolic potency given that the harbour is primarily for the export of coal. Since then, other sites have been illuminated and a tourist trail has been developed.

The development of renewable energy projects within the City has not been conducted in isolation, but rather as the product of partnership between the Council, the University and energy companies, notably EnergyAustralia (the region's electricity utility). The involvement of utilities in the development of renewable energy in NSW was facilitated by the 1995 *Energy Supply Act*. This Act replaced the price cap on energy sales by a revenue cap, so that it would be 'economically prudent for the retailer to offer demand management services and energy efficiency measures to their customers to reduce their consumption instead of selling them more electricity at no financial benefit to themselves' (Jessup and Mercer 2001: 15). Energy from renewable sources is not governed by such restrictions. Furthermore, the Act stipulates that retailers must detail strategies by which they will reduce emissions of greenhouse gases to 1990 levels by 2000. Simultaneously, the Sustainable Energy Development Agency (SEDA) was established to promote and develop renewable energy technology and to accredit any renewable energy schemes developed by the energy distributors. Critics argue that in effect these legislative changes carried little weight, given the lack of pressure for implementing reductions in emissions of greenhouse gases or penalties for non-compliance, and have made little difference to the consumption of energy (Jessup and Mercer 2001).[2] However, in Newcastle the conjunction of local authority involvement in energy conservation, state legislation and the interest of particular companies has enabled the development of demonstration schemes for renewable energy and created a consumer market for green energy. In 1996 EnergyAustralia launched its *PureEnergy* scheme, whereby consumers can pay an extra tariff to purchase renewable energy, and held a trial in Newcastle. The success of the trial, and of the uptake of the scheme state-wide, led EnergyAustralia to invest in a 600 kW turbine on the industrial site of Kooragang Island (Figure 10.1), and in solar projects on the harbour foreshore and a 400 kW project in the nearby town of Singleton. While these remain token contributions to the total electricity supply in NSW, they represent the largest demonstration projects undertaken in this area.

During 1996, the Environmental Management Department began to seek recognition for their achievements. Initially, they approached the federal government for inclusion in

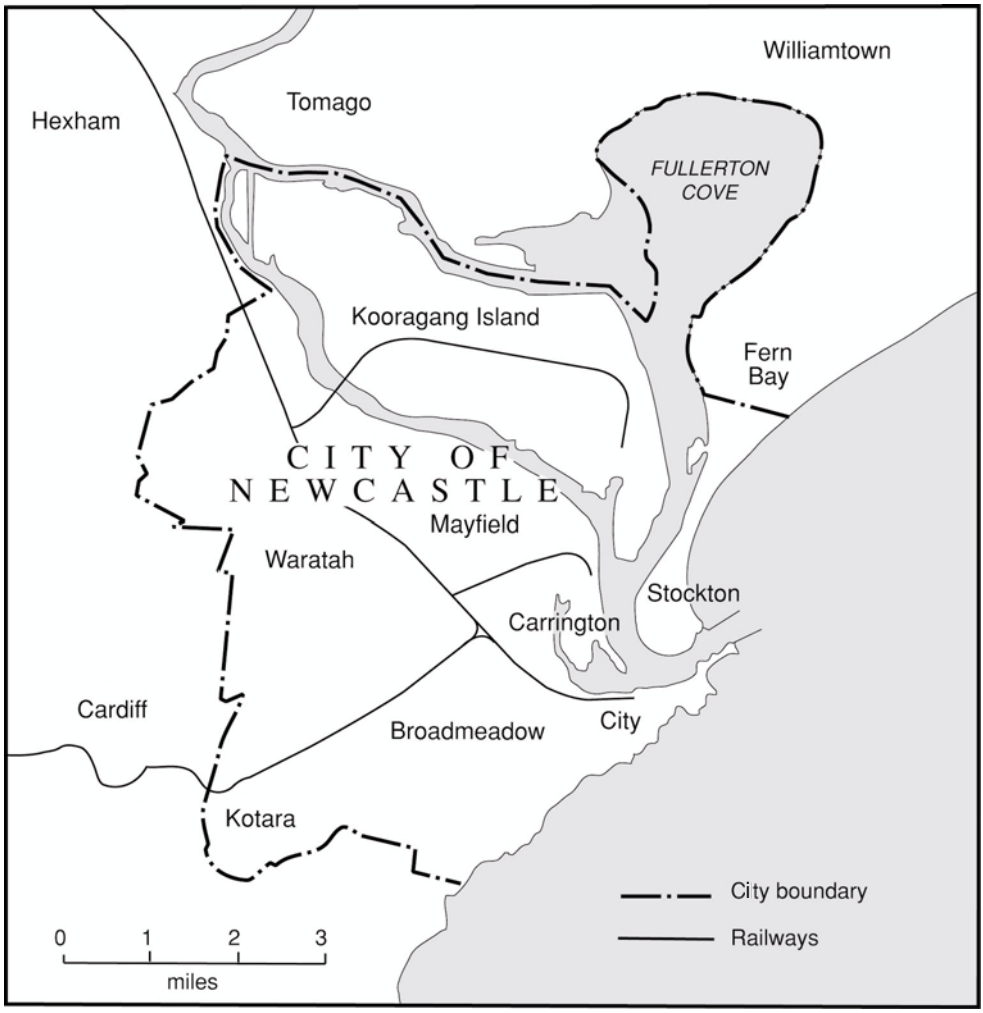


*Figure 10.1* Map of the City of Newcastle, New South Wales

the *Greenhouse Challenge* programme (see Chapter 3). This programme was developed as a voluntary programme for industry to reduce emissions of greenhouse gases. Given its industry focus, and the reluctance of the Liberal–National coalition government to intervene in the affairs of local government, traditionally a matter for state governments, there was little scope for local authorities to become involved. The international arena was to prove more receptive. Newcastle sent delegates to the 1996 Habitat II conference on sustainable cities, and in 1997, the Council joined the CCP programme and hosted a conference sponsored by ICLEI (amongst others) on 'Pathways to sustainability' for communities and local authorities. This event attracted widespread support from local stakeholders and the community. Over 7,000 residents of the Hunter region visited the Sustainable Energy Technologies Expo, held in parallel with the conference. Members of the conference agreed to a declaration on the importance of local sustainability for achieving global objectives, which was presented at the 'Rio plus 5' conference in New York:

> There is an urgent need to accelerate and assist action at all levels, particularly locally, if the global sustainable development objectives of Agenda 21 are to be realised.
>
> NCC NSW 1997

In the face of national reticence in addressing climate change (see Chapter 3) and reluctance to take local government initiatives seriously, individuals within the City Council sought recognition and assistance from outside the nation-state, and became involved in the transnational networks which have evolved since Rio to address issues of sustainability. The CCP programme, with its focus on monitoring and accounting for energy use and emissions of greenhouse gases, was compatible with the approach developed within Newcastle for internal energy management, and provided access to additional resources, including funding for the Pathways conference and information about initiatives taking place elsewhere. In return, Newcastle provided an example of best practice which could be disseminated through the CCP network, and a means by which ICLEI could begin to campaign for a regional CCP programme in Australia.

During 1996–1997, the federal government began to shift its position on the role of local government in national climate change policy. In the wake of a report by the National Environmental Law Association which suggested that local government could influence up to 50 per cent of emissions of greenhouse gases (Lumb *et al.* 1994), local authorities were included in national policy. However, there were no explicit actions which local authorities were meant to pursue and no additional funding or initiatives to assist with this task. In 1997, at the Pathways conference in Newcastle, the Federal Minister for the Environment, Senator Hill, announced funding for the CCP programme of over A$200,000. A few months later, in the lead up to Kyoto, this was increased to A$13 million over five years. The programme, it was argued by the Prime Minister, would 'assist local government to identify ways of cutting greenhouse gas emissions', and then enable 'local government to involve their community in helping to achieve these reductions' (Howard 1997). In the wake of Kyoto, a new *National Greenhouse Strategy* was published. Alongside the CCP-Australia programme, the strategy identifies more than 25 separate items explicitly involving local government, though more often than not this is in consultation, collaboration or partnership with other organizations (Campbell 1999; Commonwealth of Australia 1998b).

The reasons for this change of heart are as much political and ideological as borne from the pragmatic realization that local government was a necessary partner for the implementation of any national climate change policy. In the run up to Kyoto, Australian insistence on differentiated targets was expected to attract heavy criticism for industry and federal government and some positive measures were needed to deflect this negative publicity and to shift the focus to a more community-wide approach. Furthermore, those within federal government felt that such an approach could be used to foster greater community understanding, and that a 'less superficial' understanding of the issues would lend greater public support for Australia's stance. Meanwhile, two local government lobby organizations, the Australian Local Government Association (ALGA) and Environs,[3] had been campaigning for a more active role for local government in the climate change issue. Newcastle's example of implementing win–win solutions and their membership of the CCP programme was also crucial, as it gave the federal government the impetus to get local government involved in climate change policy and a model of how this might be achieved. This evidence supports our argument (see Chapter 2) that interactions between international, transnational, national and subnational institutions involve complex and

multifaceted processes, which can not be captured within linear, unidirectional models of the policy process.

The CCP-Australia programme was officially launched in 1998 as a joint partnership between the Australian Greenhouse Office (AGO),[4] ALGA and Environs, the latter acting as a temporary agent for ICLEI. Once endorsed, the programme experienced a faltering start as the division of responsibilities between these three different organizations was contested. Eventually, these tensions led to the withdrawal of ALGA from the programme. This created a more stable, although still difficult, collaboration between the AGO and Environs/ICLEI. In the partnership, Environs/ICLEI has taken on the roles of recruiting local authorities, providing training and technical assistance to those involved, and building political support within local government:

> We build their political support firstly, because we want to make sure that they are going to come on and stay on. We've all been burnt by that one … you then have to start up the parallel process of assisting them through their inventories because most of them don't have the skills base to deal with that, nor the access to data.
>
> Interview, Environs/ICLEI Australia, 1999

Achieving the first milestone of the CCP programme, that of creating an emissions inventory and forecast, has been facilitated by the development of software by ICLEI for this purpose, and its purchase (by the AGO) and customization for use in Australia. The resulting predictions of possible emissions reductions and financial savings are seen as crucial to the success of the programme:

> Some of the case-studies we've got, they slap them in the face really, its something that no amount of advocacy can ever achieve, it's the raw numbers, what happens when you are not doing this and you're doing this, is that you save a lot of money, and a lot of greenhouse gases.
>
> Interview, Environs/ICLEI Australia, 1999

In selecting an emissions reduction target and developing a plan of action, the CCP-Australia programme has not followed the model initially used by ICLEI of providing councils with best practice examples from around the world and letting them develop a programme of action to suit their own circumstances. Instead, the AGO has developed Australia-specific local action modules for implementation in different policy sectors, and has provided detailed examples of Australian best practice for councils to mould to their own circumstances (AGO 1999a, 1999b). Examples of action modules include a programme for implementing in-house energy efficiency, which Newcastle City Council has developed, and the 'emissions reduction incentive programme', through which financial assistance in proportion to emissions reductions achieved is available to assist in the implementation of measures across different sectors, although local governments must provide at least 50 per cent of the funding required (AGO 2001).

To date, the CCP-Australia programme has attracted 142 local authorities, accounting for almost 60 per cent of Australia's population. Its rapid growth and spread throughout the different states in Australia is clearly due to the high level of resources which have been provided by the federal government. This has funded the CCP office of seven staff and provided financial incentives for not only signing on to the programme, but taking action to reduce greenhouse gas emissions. While most local authorities in the programme

have focused on in-house energy efficiency, a range of other measures are being undertaken which focus on community emissions of greenhouse gases, from collecting green waste in Marion, South Australia, to inclusion of solar hot water heaters within planning requirements in Leichhardt, Sydney (CCP-Australia 2001). In the next section, we examine how climate protection policy has evolved in Newcastle since its membership of the CCP programme, and the opportunities and constraints encountered.

## Energy management, planning and climate protection

As we have shown in other case-studies in this book, Newcastle's membership of the CCP programme did not herald the development of a new energy agenda within the Council, but served to reinforce existing approaches to energy management. Here, we examine first how approaches to energy management within the council have evolved in the wake of membership of the CCP programme, before turning to consider how climate protection has been interpreted and implemented in the land-use and transport planning sectors. Despite their embryonic status, it is apparent that measures to reduce emissions of greenhouse gases across the community in Newcastle face challenges which are not easily overcome by asserting the win–win potential of climate change policies.

### *Energy management: a new localism*

Since the launch of CCP-Australia, a relationship of mutual dependency has evolved between the programme and Newcastle City Council. Newcastle has been a critical actor in the development and delivery of CCP-Australia, while the programme has been a key component in the evolution of Newcastle's internal energy management strategies and its nascent attempts to address energy use across the city. Central to this process has been the creation of Australian Municipal Energy Improvement Facility (AMEIF),[5] as a means through which to provide energy services to other councils in Australia, and to co-ordinate energy activities in Newcastle, both within the Council and with the community. Through AMEIF the Council has gained contracts to provide action modules on developing green energy programmes for council operations and retrofitting lighting systems. The first of these has involved officers from the City Council holding workshops around Australia to demonstrate how Newcastle has achieved its success and to support other councils in taking action:

> *R:* … we try and tell them about what we're doing here, because its just transferring some knowledge … just to help boost … confidence, and then we supply support packages, to help them get those first programmes where we actually hold their hands for the first one, and if they're not ready for the second one, for us to let go, then we come back.
>
> Interview, Environmental Management/AMEIF Newcastle City Council, 1999

As well as its involvement in specific action modules, AMEIF provides an energy management advisory service for local governments in the CCP-Australia programme in NSW and Queensland. Through these initiatives, Newcastle City Council has become a crucial component in the delivery and implementation of federal government climate change policy not only within its jurisdictional area, but also in other local authorities, and is effectively bypassing state governments to influence local energy and environmental

policy. Newcastle's profile as a centre of resource efficiency has also attracted attention from industry and research organizations. In 1999, the Energy Technology division of the Commonwealth Scientific and Industrial Research Organization (CSIRO), Australia's federal research and development organization, announced its move to Newcastle and the creation of a National Energy Innovation Centre in the city.

During this period, the Council has remained committed to improving in-house energy efficiency, for environmental and financial reasons, and in order to have new initiatives on which to base their growing consultancy business. The replacement of heating and lighting systems within council buildings has continued, as has the purchase of energy efficient office equipment, and initiatives have been put in place to bring the principles of efficient use to other areas, notably the production of waste and the consumption of water. Although these schemes initially focused on the installation of new technologies, increasing attention has been paid to the need to influence the behaviour of individuals working within council buildings in order to reduce resource consumption. Innovation awards have been created for employees who suggest creative solutions for reducing resource use, and an education programme for all employees on energy and resource efficiency is planned (NCC NSW 2001a). While the need for local action on climate change continues to provide some of the rationale for action, the primary focus is on the monetary benefits from reducing resource consumption:

> I've been down that line, where we used renewables and it was all warm and fuzzy and I'd only pick up two or three of the councillors when I went to the council to report. But when I went and swapped them around and put energy efficiency at the front, it got all of them, because it was about making money. … If you tell people that you can show them how to save something, they immediately align that with another job, because they have to find the time to do it, but if you tell them that they are losing they drop everything. So we don't talk about energy saving anymore, we talk about *financial loss control* … which is what it is. And it achieves the outcomes, I guess its not as clear and true, but if it achieves the outcome and you can get a self-sustaining movement happening … [that's OK].
>
> Interview, Environmental Management/AMEIF Newcastle City Council, 1999

This approach has meant that climate change considerations have been integrated into Council policy and financial decisions, with a report on energy consumption and emissions of greenhouse gases included in the quarterly budget review process of the Council (NCC NSW 2001a). In Newcastle, climate protection is clearly becoming part of the mainstream of council business. However, the danger of this win–win approach is that it provides too simplistic a view of the barriers to taking action to conserve resource use, and that where there are no apparent/significant financial losses, or where the payback period for reducing them is too long, initiatives which could reduce energy use and emissions of greenhouse gases will be ignored.

Given its history with developing in-house energy management, and the consultancy services it provides for other local authorities, it is perhaps surprising that Newcastle has only recently begun to address the issue of implementing resource and energy efficiency measures across the community. However, there are two key reasons why the strategy developed to manage internal energy use has not been easy to translate into community action. First, the financial savings from energy efficiency initiatives in the community do

not accrue to the Council, so that additional sources of funding are needed to initiate community initiatives. Second, Newcastle's approach has been based on the monitoring of energy use and emissions, followed by the implementation of targeted actions. This has been difficult to adapt to actions within the community, where data on energy use are scarce or are held by private companies. However, to date these problems have not precipitated the evolution of a different approach to community energy management. In 2000, the Council held the first Energy Town Meeting with the purpose of initiating community action on climate change. The event was organized in collaboration with the Rocky Mountain Institute, USA (a centre known for its expertise in resource efficiency) and attracted 900 participants, who recommended, in line with existing strategies for internal energy management, that the Council create a target for emissions reductions, develop an action plan, create a means of reporting on progress and provide information about how individuals could save energy (NCC NSW 2001a).

In the wake of this meeting, AMEIF secured funding from the AGO under the CCP-Australia programme to undertake a series of community workshops on energy use. These served as a means through which to provide information about actions which the public could take to reduce energy and water use, but also as a forum in which further consultation over the creation of a local action plan on climate change could take place. Collaboration was also undertaken with local industries, through the formation of the Greenhouse Action Partnership (GAP). The resulting 'climatecam.com' was launched at the second Energy Town Meeting, held on 4 July 2001 which was declared Greenhouse Independence Day, in an explicit stance against the rejection by the US of the *Kyoto Protocol* (NCC NSW 2001b; see Chapter 3). Climatecam.com provides a means through which current emissions of greenhouse gases from within the Council and across the city can be monitored against targets set in the 2001 *Greenhouse Action in Newcastle Plan* and its target of reducing emissions by 20 per cent across the city, and 30 per cent within the council, below 1995 levels by 2008. This monitoring tool has been made possible by the GAP, through which key industries provide data on energy and resource consumption across the city, and by council officials who collected and organized the data under the remit of the first milestone of the CCP-Australia campaign.

Although Newcastle's approach, which is summed up in their slogan 'if you can't measure it, you can't manage it' (NCC NSW 2001a: 33), is similar to the CCP-Australia programme and its emphasis on the need to quantify emissions and the impact of policy initiatives upon them, it differs in one crucial respect. In Newcastle, the emphasis has been upon acquiring accurate, local data, while the CCP-Australia programme has developed software for creating emissions inventories and forecasts which can be used with data which refers to national/state-wide trends in consumption patterns, which are then scaled to the particular local authority in question. While Newcastle's local approach has the disadvantage of being time-consuming, costly and reliant on the goodwill of industrial partners to supply the necessary data, it has the potential to create a more complete local emissions profile, and hence a more accurate picture of the impact of local policies on emissions of greenhouse gases.

The compatibility and evolving dependency between the Council's strategy and the CCP programme lies in a shared approach to energy management, based on the 'new localist' framework (Marvin and Guy 1997) introduced in Chapter 2. With this approach, monitoring energy use and emissions, and the effects of particular policy interventions on these indicators, is seen as central to creating policy change. Not only does such an approach assume a linear and rational model of policy change, but it lends weight to those policy interventions, primarily technical fixes, whose impact can be readily measured.

Furthermore, in this view, energy management is seen as a win–win strategy, whereby the main barriers to action are a lack of information, finance or appropriate technology. As a result, policy strategies focus on gathering and disseminating information to the appropriate actors, and installing best practice or demonstration projects, so that their example can be diffused throughout the urban fabric. The success of this approach in managing the internal energy use of the City Council can be attributed to the perseverance of particular individuals, the cost savings which have been achieved, the political kudos gained from being at the cutting edge of such strategies, and the potential wider economic benefits for the city of attracting 'green' energy industries to the area. Furthermore, internal energy management is an area in which local government has significant autonomy, can legitimately operate without fear of intervention on the part of the state government, and where Newcastle City Council has been able to innovate and attract funding from state and federal governments. Addressing emissions of greenhouse gases through land-use and transport planning has proven more challenging.

### *Planning for climate change: challenges beyond efficiency*

Unlike in-house energy management, over which local government has sole jurisdiction, in Australia transport and land-use planning are primarily the responsibility of state governments. The Australian planning system draws both on the structure plan element of the British town and country planning system, and on the US approach to land zoning and development control (Gleeson 2001; Winter and Brooke 1993; see Chapters 5 and 9). With regard to the former, state governments are responsible for the strategic planning of regional and metropolitan issues, while the creation of DCPs is the responsibility of local government, albeit under the watchful eye of the state (Box 10.1).

**Box 10.1: Land-use planning in NSW**

In NSW, DCPs are documents produced by local government against which applications in each local area are assessed by the relevant planning authority. DCPs provide the detail which supports the statutory policy framework established within local government Local Environmental Plans. These supply broad land-use zoning and determine the development status of all sites. State government produces Regional Environmental Plans which provide broader, strategic direction for areas considered significant for environmental planning. These are supplemented by State environmental Planning Policies concerning state policy on specific planning matters.

McGuirk 2001: 199

The planning process continues to be influenced by ideas and processes from outside Australia, as well as by social, economic and political changes within the country. This has led to a number of contradictory currents in contemporary planning (Gleeson 2001; Gleeson and Low 2000b) On the one hand neo-liberalist ideas of minimizing the planning process have become established in many state governments in Australia, notably in Victoria in the 1990s under the Kennet government. On the other hand, there have been calls to widen the scope of planning to include more participation on the part of the

public and a broader environmental agenda, reflecting the principles of sustainable development. The apparent synergy between sustainable development and planning is hardly surprising for they share a concern for the 'future impacts on and of particular localities' (Owens 1994: 440). Furthermore, the green agenda has been seen as a way in which to counter the neo-liberalist approach to planning. Within NSW, the integration of principles of sustainable development has been visible within planning policy since the mid-1990s, when the government published two significant policy papers, *Cities for the 21st Century* and the *Sydney Integrated Transport Study*, which set the strategic context for planning within the Greater Metropolitan Region. In each, the advantages of compact city development, and of integrating land-use and transport planning, were highlighted. The role of planning, and in particular of local government, in promoting ecologically sustainable development has recently been formally recognized by the NSW government:

> Under the NSW Local Government Amendment (ESD) Act 1997, 'councils are now expected to adopt a strategic "whole of council" approach toward the recognition of ecologically sustainable development and to respond positively to environmental problems in their area' (NSW Government 1997: 1). The intention is to require local councils to include the goal of ESD in their local management plans and in considering any applications – under planning legislation – for development.
>
> Christoff and Low 2000: 356.

Within this context of a mandate from the NSW government, and its own history of addressing sustainable development through the *Newcastle Environmental Management Plan*, Newcastle City Council has sought to develop the principles of 'new urbanism' in its strategic and development control planning (Christoff and Low 2000; NCC NSW 1998; see also Chapter 9). In 1998, the Council adopted the *Newcastle Urban Strategy*, which outlined these principles, such as taking a participatory approach to planning, designing developments with pedestrians in mind, integrating land-use and transport planning, and urging that developers 'be energy efficient in the materials and building techniques used, recycling and reducing the use of resources wherever possible' (NCC NSW 1998: 8). The integration of climate change considerations into planning policy in Newcastle is the result not only of the Council's experience with energy issues, but also of changing currents within planning approaches at state and local levels which have promoted the inclusion of ecologically sustainable development principles into the planning process.

In Newcastle, the principles of ecologically sustainable development and new urbanism outlined in the *Urban Strategy* have been included within the new *Local Environmental Management Plan*, which sets the local strategic context for planning. Amongst other aims for creating economic development and improving the quality of life are priorities to provide housing close to urban centres, to 'reduce travel demand and private vehicle dependency' and to 'conserve and manage our natural resources for present and future generations' (NCC NSW 2000a: 4–5). These principles have also been included within DCPs, which regulate planning in specific zones in the city or specific issues, to guide the pattern and nature of development. For example, the Council, in collaboration with the local builders' federation, has recently created a DCP governing the energy rating of new housing development. This has been modelled on the generic version developed by the Energy Smart Homes programme run by the NSW SEDA, and requires that all new housing should achieve a 'home energy rating' of 3.5 (on a scale of 1–5). A similar DCP for commercial buildings is planned. These principles are also being incorporated in

general guidance for development, for example: 'the desired outcomes for the City West DCP area over the next twenty years [include]: … energy efficient buildings … a more pedestrian friendly environment' (NCC NSW 2001c). However, points for discussion in a review of this DCP suggest that putting such guidance into action is not straightforward. The question is raised, on the one hand, as to whether sufficient consideration is being given to energy efficiency in building design, and on the other, whether enough car parking spaces are being provided, illustrating that sustainable development principles are far from dominant in land-development policies in Newcastle (NCC NSW 2001c). Furthermore, while urban consolidation and the creation of urban villages are being encouraged by the green turn in planning, the environmental benefits are not necessarily realized where car dependency remains high:

*R:* … the real trouble in the 80s and 90s is that medium-density in fact has been the success story of urban planning, in Melbourne certainly … but we haven't had the transport benefits, we might have had some of the energy benefits, but we certainly haven't had the transport benefits, car ownership is going up, Vehicle Kilometres Travelled is going up, so what's happening is that developers are building more medium density developments and elsewhere in the city we've got a whole reaction against it, 'Save our Suburbs', but when they do build more medium density houses they also have capacities for a lot more cars, and … people aren't using public transport, everyone has their car still.

Interview, Environs/ICLEI Australia, 1999

During the 1990s, the unsustainable nature of current trends in traffic growth for urban areas has been recognized within planning policy in NSW and Newcastle. However, as the quote above illustrates, in the search for ideal models of urban development the links between reducing physical distances and reducing the propensity to travel are easily confused (Owens and Cowell 2002). While the principles of demand management (see Chapters 6 and 8) are beginning to emerge within local transport planning in Newcastle, so that there is increasing realization of the need to integrate land-use and transport planning and to promote alternatives to the private car, the difficulties in taking action on climate change in this policy area remain high.

First, although public transport in Newcastle is publicly owned, it is managed and operated across the Greater Metropolitan Region from Sydney, meaning that it is viewed as less sensitive to the context and needs of Newcastle. Furthermore, the absence of any co-ordinating metropolitan level of government is perceived to have led to a situation in which 'the development of infrastructure has been incremental and non-integrated … [resulting] in inefficiencies and inequalities in the urban public transport system' (NCC NSW 1998: 3). Second, the current levels of car use, at more than 95 per cent of all journeys in the area, and the embeddedness of car use within the urban fabric, mean that encouraging alternatives to the car is difficult. A recent discussion document, produced by Newcastle City Council and nearby Lake Macquarie City Council, suggest that this analysis is defeatist:

> the argument is often heard that a revival of public transport in Newcastle is not possible because the alternative travel modes are too easy. In particular it is stated that most people have access to a car, car parking is not difficult and is usually free, and

> that public transport takes too long. These arguments run the risk of treating the whole population as being homogeneous.
>
> NCC NSW and LMCC 2001: 24

While the councils are right to point out that improved public transport would be attractive to some car users, the argument persists that where car use is easy, it is difficult to achieve a modal shift to public transport or cycling or walking (Vigar 2000). In Newcastle, levels of congestion are low and the debate about absolute reductions in car use has been restricted to the *Clean Air 2000* campaign, run by a motoring organization, NRMA, and the City Council, to try to promote car sharing in order to reduce levels of air pollution in the Greater Sydney region in the run up to the 2000 Olympics. The third factor restricting local action to reduce emissions of greenhouse gases from the transport sector is that transport planning is primarily a matter for state governments. While local governments have some influence upon transport policy through the land-use planning system, the strategic context is set by state governments, who design major transport developments so that, for example, 'local authorities have virtually no influence over the freeway routes eventually chosen, let alone over the broader, and more fundamental, environmental question of transportation policy in general' (Mercer and Jotkowitz 2000: 176). A final factor reflects the contradictions between Newcastle's search for a 'clean and green' economy, and the promotion of economic sectors, such as port-related activities and tourism, which are seen to require more transport infrastructure, which may in turn promote increased use of private cars and goods vehicles:

> In view of the Region's trade and export focus, investment in port and airport infrastructure is important. Top quality road and rail networks are essential for moving freight and passengers within the Region, state and country.
>
> NCC NSW 2000b: 15

The process of putting the principles of ecologically sustainable development into practice within land-use and transport planning in Newcastle has begun, but as with the other case-studies documented in this book, this has not been straightforward. While it is too soon to tell what the impact of new policies within the city will be, it is clear that contradictions between different goals – economic, social and environmental – have not been resolved, and that, unlike in the area of energy use and production, the need to manage demand has not been a central focus of policy development or implementation.

### *Progress, conflicts and constraints*

Newcastle City Council has made significant progress in implementing climate protection policy, although this has focused on its own internal operations and the creation of renewable energy demonstration projects. Four key factors account for this success. First, Newcastle has undergone a process of considerable economic restructuring over the past two decades, and the Council was searching for a means through which to re-invent the city's image and economic base. This process of re-invention, the need for new possibilities and the chance to do something different, have been crucial to the success of Newcastle's approach to green energy:

*R:* Newcastle was like, disaster staring it in the face, total reinvention required, when you are faced with crisis you have a courage that other councils don't have, and they have done it fantastically well. … Other councils … have done really good work without having to go through the crisis, but couldn't, simply don't have that political will that you muster when you have a whole region suddenly facing, you know, major disaster.

Interview, Environs/ICLEI Australia, 1999

A key part of the strategy developed within the Environmental Management Department of the City Council has been to sell the opportunities for economic growth and employment created by the adoption of a 'clean and green' approach to development. This has been achieved by illustrating the local jobs created through the Council's own energy efficiency programme, attracting investment in renewable energy developments, conferences and the CSIRO research and development centre. In turn, these initial successes have added weight to the arguments of those within the Council who have promoted local action on climate change. The second factor which has enabled the development of local climate change policy has been the expertise and commitment of particular individuals to energy efficiency and renewable energy. Despite personnel changes, an active group has continued to promote energy and climate change issues and have succeeded in making energy efficiency part of the 'core business' of the Council (Collier and Löfstedt 1997: 36). However, these individuals also relied on the changing political context within Newcastle to make an impact:

*R:* If I had been in another council, for example if I had been in the last Council, despite all the will that I have, I would have not chosen to run this because it was not the right time and moment, and the political structures weren't there to enable that to happen … it is wisdom to know the time and the moment and the players and you are going to take the risk, because some of the things we have done here have been, I think, awfully risky. Most councils [would say] what is the bloke in that job doing spending his time trying to build a wind farm? That's not our business! … And I can understand why other guys in my job are shaking their head at what we are doing here and it wouldn't be right for them and their councils to do all the stuff we are trying to do. But they are quite happy to take little bits of what Newcastle is doing and that is all right by me, because they have done, and have succeeded.

Interview, Environmental Management (a), Newcastle City Council, 1996

Third, within the Council, policy development has focused on areas in which economic savings can be made through the implementation of energy efficiency measures. To a Council experiencing some financial difficulties this was an attractive message which could easily be sold on the basis of the data collected from a few council buildings where energy efficiency was first implemented. Furthermore, it has provided a source of funding for additional, less financially attractive, initiatives, such as renewable energy demonstration projects (although these would not have been possible without the involvement of non-state actors and legislative changes within NSW). The funding arrangements within the council allowed the green energy team to innovate during the 1990s. This, in turn, led to the fourth factor in Newcastle's success, the ability to gain international and national recognition, and the added internal kudos and access to external funding which this

creates. Newcastle's membership of the CCP programme, and its subsequent influence on the creation and implementation of CCP-Australia, has created opportunities for funding activities outside the Council's own operations, with businesses and the community.

As the City Council has sought to carry out this expansion, the problems with putting local climate change policy into practice have become apparent. First, in line with the new localist framework, the approach adopted by the Council has stressed the need to quantify energy use, emissions of greenhouse gases and costs saved by particular actions. While this mirrors the approach adopted by the CCP-Australia programme, Newcastle have focused their attention on acquiring accurate local data on emissions in order to provide a 'true' picture of the savings made through local action. Not only does this accountancy approach raise the issue of determining whether it is a specific local policy or another factor which has reduced emissions, it also runs the risk of sidelining the non-calculable and non-monetary benefits of taking local action on climate change by stressing the need for quantification of results and concrete outcomes. This could result in neglect of the more difficult, though perhaps more important, sectors of land-use and transport planning, where the impact of specific policies is difficult to determine and where the calculation of energy use is more difficult. Moreover, it has led to a focus on technological or behavioural change as the means of securing emissions reductions, essentially leaving unaffected the institutional contexts through which energy use is created and maintained.

Second, the involvement of the Council in policies and processes to reduce emissions of greenhouse gases from outside its own operations could bring it into conflict with other local policies, for example, for the economic development of the port, or with state government. Marvin and Guy (1997) suggest that the new localist discourse tends to overstate the autonomy and agency of local government. While the context for addressing climate change through land-use planning within Newcastle has been favourable, a change of heart at state level could reduce the level of influence which local government is able to have on this aspect of development. The relationship between local and state government in Australia is predominantly top-down, so that state governments have the ability to override local decisions, to assume the status of consent authority for development, and even to dismiss elected local governments (see Chapter 4). This does not bode well for local action to address climate change, for as Gleeson (2001: 143) suggests, 'the policy record of recent decades is replete with … examples of state direction, where ministerial prerogative has been used to override community opposition to developments with major environmental and/or social impacts'. Third, the shift towards addressing emissions of greenhouse gases across industry and the community exposes the potential conflicts between the economic development of the city and the need to address climate change. While emphasis has been placed on the promotion of a sustainable energy technology industry, the coal economy remains important to Newcastle:

> I mean, we're battling and it's a difficulty in terms of what level of influence the Council has to make significant structural changes. I mean, [what is] always … forgotten and outside of a lot of our influence, is simply that we export a lot of coal.
>
> Interview, Environmental Management (b), Newcastle City Council, 1996

Newcastle's ecological footprint stretches beyond the city limits in ways that the Council has little control over. In late 1996, the construction of a new coal loader began in the docks; it is set to raise the coal-exporting capacity of the port to the highest in the

world in the next few years. However, while the large-scale export of coal from the region to the rest of the world has posed some challenges in accepting local responsibilities for climate change, the consensus has been that such challenges should not prevent the Council from addressing climate change obligations that fall within their jurisdiction. In so doing, the Council have begun a discussion with local industries and the community as to what constitutes justice and an appropriate pathway to sustainable development, and to reflect on the ability of industrial modernity to address global issues. This suggests that the Environmental Management Department has been at least partially successful in its ambitions, set out in the *Newcastle Environmental Management Plan*, to serve as a testing ground for the possibilities of local action on climate change (NCC NSW 1995). By providing the Council with a means through which to disseminate their experiences, and further resources to develop their own strategies for energy management, the CCP programme has been critical in this success.

## Conclusion

Australia has attracted a good deal of notoriety for the position it has taken in international negotiations, arguing that action on climate change would impose undue costs on industry and the community, and would not be in the national interest (Bulkeley 2001a). However, the case-study of Newcastle City Council shows the danger of equating the positions adopted in international negotiations with the level of domestic or local action on climate change. Throughout the 1990s, Newcastle City Council has been at the forefront of local initiatives to address climate change, and was instrumental in the creation of the CCP-Australia programme. Initially, climate change policy in Newcastle was undertaken within a framework constructed from both international and national policy, developed in conjunction with stakeholders in the energy industry and justified by ecologically modern discourses on efficiency, monetary savings and technological fixes (Christoff 1996; Hajer 1995). Having found little support for their initiatives at the national scale, officers of the City Council turned to international institutions: at Habitat II; through organizing the Pathways to Sustainability Conference; and by signing up to the CCP programme. In turn, these initiatives attracted the attention and support of federal government, in the form of funding for the CCP-Australia programme, and furthered the rationale for the explicit inclusion of local governments in the revised *National Greenhouse Strategy* (Commonwealth of Australia 1998b). The complex, multilevel nature of these interactions challenges any simplistic cascade model of relations between international regimes, national and subnational governments (see Chapter 2).

Since its initiation, Newcastle has continued to play a key role in the development and implementation of the CCP-Australia programme, through the development of action modules and in the provision of an energy advisory service. Likewise, the resources and opportunities created by the CCP-Australia programme have been critical to the continued development of policy, creating a relationship of mutual dependence which has kept open connections between the local authority and the network. Two factors have been central to this process.

First, the CCP-Australia programme has provided funding, both from the income generated through the contracts won by AMEIF and directly through grants provided for the implementation of local action modules. The level of funding provided by the federal government for the CCP programme, and the development of action modules, constitute unique features of the CCP-Australia programme. The experience of Newcastle, and of

other local governments in Australia, suggests that these initiatives have been crucial in the successful implementation of local climate protection policy. However, given the competitive nature of these funding sources, the success of some councils may be at the expense of others (Guy and Shove 2000).

Second, the programme, and Newcastle's high profile within it, has generated significant kudos for individuals within Newcastle City Council who argue that, through addressing climate change, the city can simultaneously create a 'clean and green' image for itself *and* reap financial benefits. In turn, the CCP-Australia programme has become a central part of Council business. Other factors have also been significant in accounting for Newcastle's success, however, including the political climate in Newcastle, which has permitted the airing of radical ideas, the creation of a pool of funding through energy efficiency measures within the council, and the support of local energy industries for the development of renewable energy projects. In this case, the CCP programme has played a role in creating the conditions for its own success, although much of the groundwork, in terms of establishing local coalitions of interest around the issue of climate protection, was conducted by the City Council in advance of its membership of the programme.

Newcastle clearly has been successful in implementing energy efficiency measures within its own operations, and in providing the impetus for renewable energy demonstration projects and the formation of an embryonic sustainable energy technologies industry. However, as the City Council moves towards implementing energy efficiency measures within the community, and as the principles of sustainable development begin to slowly permeate the land-use and transport planning processes, the fragility of local climate protection policy is becoming apparent. Issues concerning the scope of local government activity, co-ordination between local government and state government, and conflicts of interest between economic and environmental objectives, all raise significant problems for a local approach to global sustainability. While Newcastle has benefited from the mandate of the NSW government that local authorities should address the principles of ecologically sustainable development in their planning policies, the relationship between state and local government remains fraught and the possibility of putting such principles into practice uncertain. Without further commitment to changes on the part of federal and state governments in those areas in which they have jurisdiction, such as transport, energy, metropolitan land-use planning, development proposals and strategic planning, local government action may end up as little more than a drop in the ocean. Unlike in-house energy efficiency measures, the win–win potential of initiatives to address climate change in the housing, planning or transport sectors is unclear. If Newcastle continues to focus on the ways in which demands for energy can be met more efficiently, deeper questions concerning the need to meet existing demands may be neglected (Owens 1997). Furthermore, the approach adopted by the CCP-Australia programme, and by Newcastle City Council, suggests that the barriers to action on climate change lie largely in ignorance, a lack of confidence and inadequate financing, which training and monetary savings from initial projects can overcome. While this is certainly true for some activities, as those involved readily admit, other actions may require deeper shifts, which entail regulatory or statutory changes, and which may be difficult to achieve while state governments possess the power to overrule decisions and the federal government appears uninterested in taking climate change to heart. Whether this logic can be applied to climate protection in areas such as land-use planning, transport and addressing the demand for energy across the community, without attracting significant opposition, seems unlikely.

# Part III

# Conclusions

# 11 Cities protecting the climate

In Part II, we documented how the issue of climate change is being addressed in six local authorities. While each case is in some sense unique, common factors can be identified which have shaped the success, or otherwise, of local initiatives to protect the climate. In this chapter, we begin by assessing the impact of the CCP programme across the case-studies, and detailing the factors which have promoted or prevented its development within local government. We then undertake a comparative analysis of the opportunities and constraints which have been encountered as climate protection policy has been put into practice in the areas of land-use planning, transport and energy management. We conclude by assessing the degree to which the CCP programme has achieved its objectives, and by identifying the five key factors that have shaped the local politics of climate change in these case-studies and their implications for urban sustainability.

## Making a difference?

The experience of the CCP programme in each of the case-studies has varied considerably. In this section, we first analyse its impact in each local authority, before considering which factors have been important in shaping the local development of the programme. We find that existing concerns for energy management, a strategy for local development centred on 'green growth', committed individuals, access to funding, the institutionalization of the programme within the administrative structures of local authorities and a shared understanding of energy issues between the local authority and the CCP network, have been critical to its success.

### *The impact of the CCP programme*

Of the case-studies examined in this book, the impact of the CCP programme has been greatest in Denver and Newcastle (NSW). In each case, on the basis of involvement with the programme, climate change considerations have been integrated into the institutional structure of local government. In Denver, a full-time member of staff has been designated as co-ordinator for the CCP programme, monitoring and reporting on initiatives taking place across departments which have implications for local emissions of greenhouse gases. Moreover, climate protection has been adopted as a core activity of the environment division. In Newcastle (NSW), in the wake of the establishment of CCP-Australia, the AMEIF was created in order to promote the city council's experience to other local authorities in Australia and to co-ordinate action within the city. Moreover, climate change considerations have been formally integrated into policy and financial decisions, through a report

on energy consumption and emissions of greenhouse gases which is included in the quarterly budget review process of the city council (NCC NSW 2001a). Active involvement in each case, with the continual monitoring and reporting of in-house energy consumption has established firm links with the CCP programme headquarters in each nation-state. Participation in the CCP programme has also given those parts of the local authority concerned with energy use access to additional funding. In Denver, this has been through changes to internal funding priorities and funds from the Environmental Protection Agency and Department of Energy, and in Newcastle (NSW) from the activities of the AMEIF and the CCP-Australia programme. In both places, various innovative policies towards the in-house management of energy and the development of alternative forms of energy supply have been developed, though the CCP programme has been only one factor in their development. In turn, these have formed the basis for the dissemination of experience to other local authorities through the CCP network. Both Denver and Newcastle (NSW) have been net 'donators' rather than 'learners' in this network. Politically, the programme has raised the profile of those concerned with energy conservation and sustainable development within the authority. However, it has only been in Newcastle (NSW) that this has been translated into a high-profile commitment to addressing climate change and a strategy for sustainable economic regeneration of the city. In Denver, external activities have been muted by powerful interest groups and state politics, which reject any explicit attempts to reduce emissions of greenhouse gases.

In Newcastle (UK) and Leicester, the impact of the CCP programme has been mixed. In both cases, the programme has been one of the transnational networks with which the local authority has been involved, and a factor which has contributed to the establishment of partnerships with other European cities as well as providing access to European funding. In Leicester, this has led, for example, to considerable research on the potential for energy conservation and renewable energy measures within the city, and the establishment of an energy agency and the *Energy Sense* programme promoting home energy conservation. In turn, such initiatives have helped to shape the policy agenda for addressing energy issues across the city, for example, through the development of advice on energy efficiency measures given to the public. The need to lead by example in order to protect the climate has provided a further rationale for existing in-house policies on energy management. Furthermore, involvement in the programme has given particular individuals political kudos, at least in its initial stages, and created the opportunity for them to move energy and climate protection up the local agenda. On this basis, it is possible to argue that the CCP programme has had an indirect impact on the development of climate protection policies, and urban sustainability more generally, in both cities. However, the exact nature and extent of this influence is impossible to quantify. Moreover, in neither case was the CCP programme institutionalized within the administrative, monitoring or accounting structures of local government. On-going processes of assessing local emissions of greenhouse gases were not established, partly for reasons of access to data, and information on best practice not seen as necessary or applicable, so that regular contact and involvement with the CCP network was not established. This left the programme vulnerable to shifts in personnel and politics, and by the late 1990s it had been all but abandoned in each case, although Leicester retained a passive interest. The recent launch of the UK *Councils for Climate Protection* programme has galvanized interest within Leicester City Council once again, leading to renewed efforts to model energy use across the city and community. By helping local governments to address issues of data gathering and emissions modelling, and through creating examples of best practice

which are more relevant to the UK context, this programme may provide some support for further local initiatives on climate change in the UK. However, the programme does little to tackle the institutional and political constraints facing local action on climate change, which we summarize below, and its impact remains to be seen.

Of the case-studies discussed in this book, it has been in Cambridgeshire and Milwaukee that the CCP programme has had least impact. In neither of these cases did the CCP programme lead to significant changes in administrative structures, financial resources, policy development or the political potency of the issue of climate protection within the local authority. In Cambridgeshire, the programme provided individual officers and councillors with an additional rationale for their concerns with energy and climate protection, and the need for in-house energy management. In addition, the milestone approach seems to have influenced the way in which local climate protection policy has been conceived. However, a lack of resources to access the network, and a feeling that the best practice examples offered were not relevant to the UK context, have meant the council has remained at arms length from the programme. The lack of any on-going data monitoring exercise, hampered by the limited availability of data on the use of energy across the community, or participation in events or exchanges of best practice, has meant that the extent of any engagement with the CCP network was minimal. In the midst of personnel and political changes, such connections are easy to sever. In Milwaukee, although the officer responsible for the programme took part in network events, these were not connected to the local authority in any meaningful sense, so that the programme remained external to every aspect of policy development. Once this individual left, participation by the local authority in the CCP programme effectively ceased.

From this brief summary of the impact of the CCP programme across our case-studies, it is clear that it has had the most impact on local authorities which have been critical to its development: Denver to the *Urban $CO_2$ Reduction Project* and Newcastle (NSW) to the foundation of CCP-Australia. Leicester and Newcastle (UK) became involved with the programme because of their acknowledged expertise in the area of urban energy management. These local authorities have primarily been 'donators' of best practice to the network rather than recipients. This raises significant questions as to whether transnational networks of local authorities can effectively involve those who have not been leaders in their fields, or promote policy learning and change. We return to these issues in Chapter 12. Below, we examine the factors which have led to the different levels of involvement in the programme across our six case-studies.

### *Progress, problems and prospects*

Having assessed the impact of the CCP programme across our case-studies, we turn now to a more detailed consideration of the factors which have enabled and constrained its development within local government. In the majority of the case-studies the need for local action on climate change has not been promoted in isolation. Initial concerns about energy use were based on other issues, such as the potential for financial savings or the need to improve local air quality. Thus, climate change has been added to other rationales for energy conservation, rather than providing a justification for policy action in and of itself. This suggests that the focus of the CCP programme on the co-benefits of local action on climate change has resonated in those local authorities where an energy agenda has been established. For example, in Newcastle (UK), concerns about financial savings and fuel poverty have meant that the local authority has been involved in energy conservation in its

own property for over 30 years. Climate change has provided an additional rationale for pursuing this agenda. However, in Milwaukee, interest in the issue of climate change sprang not from a specific interest in energy issues, but from a general environmental concern expressed by the City's mayor. Given that, of the case-studies presented in this book, Milwaukee has experienced the least progress in integrating climate change concerns into other policy sectors at the local level, this indicates that a generalized concern for the 'environment' within a local authority may not sustain interest in climate change specifically. Rather, it is in those local authorities where an energy conservation agenda has been established locally, or introduced in the wake of national policy developments, that the co-benefits, and therefore a broad rationale for addressing climate change, have been realized. However, as is evident from the other case-studies, the framing of climate change as an issue through which additional, more local, concerns can be addressed is not sufficient to maintain involvement in the CCP programme, or to ensure that climate change objectives are met. Our findings suggest that the assumed compatibility between climate protection and different elements of the sustainability agenda is fragile, a point which we return to below in the context of specific policy sectors.

In three of the local authorities, addressing climate change has fitted with the broader aim of promoting sustainable development within the local authority area. In Leicester, the Environment City designation and its recognition at the Rio Conference as one of the leading local authorities on sustainable development has given the council a reputation to live up to, both within its own community and outside. In Denver, Mayor Webb has been keen to promote the city as an environmental leader and an attractive destination for high-tech industries. Likewise, in Newcastle (NSW), addressing climate change through the development of new energy technology has been one part of promoting a 'clean and green' future for the city and, in turn, of attracting a federal government research and development centre and catching the interest of energy utilities. In these local authorities, to some extent, the 'spiralling place competition between cities eager to attract investment capital' (Gleeson and Low 2000a: 16), resulting from complex processes of globalization and neo-liberal political reforms, has worked to promote local action on climate change rather than undermine it. This suggests that there is no necessary contradiction between sustainable development and economic regeneration or growth, although it does raise questions about the type of climate protection policies that can be pursued, which we address below. It also suggests that only some places will be able to capture the 'competitive advantage' of being a 'green' city, raising doubts as to whether such a rationale can form the basis for broad participation in transnational networks of subnational governments.

That climate change, and the CCP programme in particular, have been seen as a legitimate part of the business of local government is due to particular individuals. In each of the local authorities, initial participation in the CCP programme was the result of the interest and/or knowledge of one person, or a small group of people, within the local government. This finding fits with Collier and Löfstedt's analysis of climate protection policies in local government in Sweden and the UK, which they found were 'often the function of one or two particularly committed local authority officers, members of the local Council, or representatives of the municipal energy company, who have managed to persuade the rest of the Council on the merits of drawing up reduction strategies' (1997: 36). In the case-studies presented in this book, individuals have seen the CCP programme as providing personal benefits, including opportunities to voice concerns, learn from others in a supportive environment, gain international experience and promote their inter-

ests within the local government. In Denver, Newcastle (NSW) and Leicester, a degree of continuity among council officers and politicians has been one factor which has maintained contact between the local authority and the CCP programme, albeit passive in the case of Leicester. In the other case-studies, personnel and political changes have resulted in the connection with the CCP programme being abandoned, lost or forgotten. However, the influence of individuals should not be overstated, for even in those case-studies for which proactive individuals were instrumental in retaining membership in the programme, action in the key sectors of land-use planning, transport and energy conservation in the built environment, has been limited (see below). What is perhaps more important is the extent to which the concerns and interests of those individuals have been institutionalized within the local authority. As illustrated above, in Denver and Newcastle (NSW) the interests of these individuals have been given a degree of permanence by the establishment of particular administrative structures in the wake of the CCP programme. In Leicester, energy management has been established within the administrative structures of local governance through the formation of an energy group, which monitors the internal use of energy, the energy advice centre and the Energy Agency, and has been integrated into decision-making and priority-setting through the development of the EMAS, although none of these initiatives were prompted by direct involvement with the CCP programme.

Also central to the impact of the programme has been the availability of financial resources. For some local authorities, the CCP programme has created access to external funding opportunities. Internal funding arrangements have also been critical. In the majority of the case-studies documented in this book, the pursuit of internal energy management policies has been made possible by financial arrangements in which the up-front costs of investing in energy management have been borne by the local authority and repaid over time, and where financial savings have been invested in further energy efficiency or renewable energy measures. These opportunities have not been created directly by the CCP programme. In fact, they could be seen as a factor enabling these local authorities to participate in the network. First, because they have promoted internal energy (and financial) savings which have enabled those concerned with climate protection to promote further action by the local authority, including involvement in the CCP programme. Second, because they have led to the development of expertise within the local authority on issues related to energy efficiency, which in turn has given the CCP programme a reason to recruit and retain these cities as members. In Milwaukee, funding mechanisms continue to marginalize low-profile and longer-term activities such as energy management, and political interest in this issue remains scarce.

Finally, although those local authorities which have been actively involved have not followed the CCP programme, and its milestones, to the letter, they share with it a conceptual approach to addressing energy management and climate protection at the local level. In each case, this had been developed before the local authority became a member of the CCP programme, and thus it is difficult to untangle the influence of the programme from other processes already taking place. Nevertheless, this shared approach has been one factor which has shaped the longevity and influence of the programme. The process of evaluating and monitoring local emissions of greenhouse gases is not only a technical exercise, but provides a continual source of contact between the local authority and the network, and a sense of mutual dependency, which keeps the network together. In the main, energy management is seen as a technical exercise, for which climate protection provides an additional rationale. There is an emphasis on the need to model local energy

use and emissions of greenhouse gases in order to be able to take action, summed up by Newcastle City Council (NSW) in the phrase, 'if you can't measure it, you can't manage it' (NCC NSW 2001a: 33). There is also a belief that measures or actions which have been successful in one place – so-called best practice – can be transferred to another context. Action on climate protection at the local level is seen to have additional, and particularly financial, benefits, so that the process of implementation is seen as (relatively) unproblematic. This accords with the new localist approach, introduced in Chapter 2, in that policy attention is focused on the technical and behavioural changes needed to implement sustainability; the local is seen as separate from the national and international processes which shape it; a rationalistic view of the policy process is adopted, whereby more information can create change; and little consideration is given to conflicting and competing interpretations of what local climate protection means (Marvin and Guy 1997; Gibbs 1999).

While this approach may be suitable for addressing in-house energy management, its applicability outside the local government estate, where energy flows and financial benefits are difficult to capture, is questionable. Moreover, our case-studies suggest that the assumptions of policy learning and change contained within this model are difficult to maintain (see Chapter 12). The continued adherence to such an approach may go some way towards explaining the relative lack of success of initiatives to address greenhouse gas emissions across the wider community. Despite the different experiences of each of these case-studies, action on climate protection has been confined largely to the in-house management of energy, either because of fears of direct opposition by local economic interests, as in the case of Denver, or because of more subtle but nonetheless problematic constraints which local authorities have encountered when trying to put climate protection policies into practice. In each case, it is clear that articulating the need to address climate change locally raises fundamental questions about the relative priorities of economic growth and environmental protection.

## Interpreting and implementing climate protection locally

In each of the case-studies in Part II, we examined in detail the impact of climate protection policies in particular policy sectors – land-use planning, transport and energy management in the built environment. In this section, we analyse how climate change considerations have been integrated into policy principles and practice in each of these areas in turn, and assess the opportunities and constraints encountered by local governments in addressing these issues. We find that while, in most cases, the need to protect the climate has entered into policy rhetoric, there is little evidence to suggest that this need is becoming institutionalized within the practices of decision-making or that it is changing the nature of urban development.

### *Planning*

The impact of the form and design of urban areas on energy use has attracted sustained attention over the past decade (Banister *et al.* 1997; Breheny 1996; Jenks *et al.* 1996; Owens 1992). The argument is made that land-use planning, with its influence on both the location and density of development, as well as the design of neighbourhoods and individual dwellings, has a significant role to play in achieving sustainable development, and in particular in reducing the energy use of new developments. While it is clearly

simplistic to assume that the location, density and design of development alone can reduce energy use in urban areas, how developments are designed and planned will have a significant impact on future emissions of greenhouse gases.

In three case-studies, Newcastle (UK), Newcastle (NSW) and Milwaukee, we examined how the land-use planning system has engaged with the issue of climate protection. In each case, the importance of planning as a means for addressing urban sustainability is recognized. In Newcastle (UK) and Newcastle (NSW), this means that the impact of planning decisions on local emissions of greenhouse gases is explicitly considered. Moreover, in all three cases, the rhetoric of 'urban sustainability', the 'urban renaissance' or 'new urbanism' suggests that urban density should be increased, developments should be planned for multiple use and the need to travel should be reduced, but the links to climate protection remain implicit. However, that local land-use planning policy reflects concerns for urban sustainability and climate protection is due to a different combination of factors in each case, although none that can be attributed directly to the CCP programme. In Newcastle (UK), planning officials had an existing interest in the issue of energy use in the urban environment, and they sought funding from the European Commission to undertake a study on the potential for the city to reduce its emissions of greenhouse gases. Subsequently, policies to improve the energy efficiency of new housing, reduce the need to travel and promote renewable energy were integrated into strategic planning policy. Changing national planning policy guidance in line with principles of urban sustainability and the urban renaissance in turn reinforced previous local commitments, and prompted a renewed interest in inner-city (re-)development within the city. In Milwaukee, the promotion of new urbanism owes much to the interests of Mayor Norquist, and his appointed officials, who view planning as a key means of regeneration. In Newcastle (NSW), the commitment of the council to pursuing energy conservation has begun to spread to the area of land-use planning through the inclusion of new urbanist principles in planning strategies and energy efficiency requirements in development control policies. This has been facilitated by state legislation which requires that local authorities take the principles of sustainable development into consideration when designing their strategic plan and making development control decisions, and by the work of the NSW SEDA on designing development control agreements with local house builders to improve the energy efficiency of individual dwellings. Together, these cases illustrate that the development of climate protection policies within local government does not take place in a top-down manner, but is the result of different factors working at the local, regional and national scales concurrently.

Despite the explicit or implicit inclusion of policy principles to address emissions of greenhouse gases through land-use planning in each of these case-studies, their implementation has been far from straightforward. Where local authorities own land, or can exercise significant powers over its use, for example, through reclassifying zoning to require mixed-use development, policies to reduce energy use through the form or design of developments have been implemented. Likewise, if a particular development site is sought after, or if agreements have been entered into with local house builders, it has been easier to persuade developers to adopt more energy conservation measures than would otherwise have been the case. However, such instances remain few and far between, and in the majority of developments business continues as usual.

While the principles of changing urban form in order to make development more sustainable have been accepted and, to a degree, are being implemented across the case-studies, questions remain as to their impact on energy use. For example, it is often argued

that reducing the need to travel will have the effect of reducing the amount of travel. Without accompanying policies to reduce the demand for car travel, land-use planning policies in isolation may not succeed (Owens 1995a), and indeed, as illustrated by the Milwaukee case, may make matters worse. In the three case-studies, the ability of the local authority to implement measures which explicitly target the energy consumption of individual dwellings, such as energy efficiency standards or passive solar design, remains limited. In Newcastle (UK), the local authority has provided guidance on these issues, but is unable to enforce high standards through the planning system, in part because they are considered matters better addressed through the national building regulations. In Milwaukee, new urbanist policies fail to include energy efficiency as a design issue. In Newcastle (NSW), success in improving the energy efficiency of new domestic buildings has recently been negotiated with the local house builders' federation, though it remains to be seen how this will take shape in practice.

Rather than lying with a lack of information about the relevance of planning to urban energy use, the problems of acting on climate change through the land-use planning system are more deeply seated, and reflect the fluid relationship between local governments, state or national governments and other stakeholders in the development process. Planning does not provide a conduit through which pre-existing concepts are transferred from policy principles into practice, but is an arena in which the meaning of sustainability is constructed and contested (Owens and Cowell 2002). While the principles of a new urban development agenda have been embraced in each of the case-studies, what this means for environmental sustainability in general, and climate protection in particular, is not clear. Rather, the struggle to interpret and implement particular versions of these ideas is central to the local politics of sustainable development. In Newcastle (UK), the need to regenerate inner-city areas, promote economic regeneration and provide additional housing has shaped the debate about urban planning and sustainability, so that any explicitly environmental considerations have been sidelined. Likewise, in Milwaukee, environmental concerns have been peripheral to the main aims of urban regeneration and have been framed largely in terms of local amenity. In Newcastle (NSW), some explicit measures to address energy use in the urban environment have been implemented, but many continue to advocate traditional approaches to development, such as ensuring sufficient provision of car parking spaces. Far from providing a blueprint for sustainable development, the integration of climate change concerns into land-use planning has brought to light the tensions between economic, social and environmental objectives.

### *Transport*

In each of the three countries from which the case-studies are drawn, the transport sector is an important and growing source of emissions of greenhouse gases. The potential of technical fixes, through improvements to the energy efficiency of motor vehicles or the development of less carbon-intensive fuels, has long been heralded as a means by which to reduce emissions from this sector. In Denver, this approach took the shape of the *Green Fleets* programme, which has been replicated by other cities in the CCP programme. However, it is increasingly recognized that, in themselves, such measures are inadequate, and that reductions will depend on an absolute reduction, or at least containment, of the number and length of car journeys (Potter *et al.* 2001; RCEP 2000) – in short, the introduction of demand management measures.

In three of the case-studies in this book, Cambridgeshire, Denver and Newcastle (NSW), we examined the development of climate protection policies in the transport sector. In each case, to at least some degree, the principle of transport demand management as a necessary means for addressing urban sustainable development has entered into the policy arena. In Denver, this debate is largely confined to the City's own employees, for whom a bus pass programme has been introduced, although the City also lobbies for increased provision of public transport in the metropolitan area. In Newcastle (NSW), emphasis is also placed on the need to create a modal shift, away from the car to alternative forms of transport, through providing public transport and information about it to the community. In Cambridgeshire, debates about demand management have been the most extensive, and have focused on 'soft' or 'persuasive' measures (Marvin and Guy 1999b), such as providing information about alternatives to the car, creating more public transport infrastructure and integrating land-use and transport planning. In addition, elements of 'hard' demand management, such as restraining car access to the city centre, increasing parking charges and experimenting with road-user charging, have also been included in the Council's transport policy.

The rationale for addressing the demand for car transport differs in each case. In Denver, initial concerns about local air quality prompted the City to invest in alternative transport for its employees, although the greenhouse gas emissions reductions benefits have also been calculated and included in the City's CCP programme. Results show that across the metropolitan area congestion levels are rising, prompting investment in transport infrastructure. In Newcastle (NSW), concerns for air quality have been accompanied by the realization among those working on climate protection in the city that the issue of transport needs to be addressed. Such action may be facilitated by the state legislation requirement that local authorities address sustainable development and the evolution of new urbanist planning principles discussed above. In Cambridgeshire, it is argued that the economic, social and environmental impacts of continued traffic growth need to be managed. This debate reflects local trends in traffic growth and congestion, as well as national concerns for the impacts of car transport on economic efficiency, communities, health and the environment. Here, climate change has explicitly been recognized locally and nationally as an issue which transport policy should address. From these case-studies, we can see that arguments for demand management stem from policy development at different, interacting, scales of governance. In Newcastle (NSW), state policies promoting the integration of land-use and transport planning have been significant, and in Cambridgeshire the influence of national policy development is also evident. However, in none of the case-studies, aside from the *Green Fleets* initiative in Denver, was the direct influence of the CCP programme apparent.

In practice, for each of these case-studies the impact of demand management measures on emissions of greenhouse gases has been minimal. In Denver and Newcastle (NSW), this is partly a reflection of the limited extent to which such measures have been put into place, but also, like the situation in Cambridgeshire, it reflects issues concerning the influence, resources and powers of local authorities in this sector, conflicts over how demand management should be interpreted, and a continuing belief in the necessary connection between economic development and traffic growth. In each case, emphasis has been placed on the need to improve alternative forms of transport provision, in particular public transport. However, the extent to which the local authority can affect the provision of public transport is limited. In Denver and Newcastle regional organizations, and in Cambridgeshire private companies, supply public transport. In this context, the role of the

local authority becomes one of lobbying for better provision, creating transport infrastructure, such as bus lanes, for the supply of more public transport, and informing the public about, and persuading them to use, these services. Although other forms of soft and persuasive demand management have been experimented with in each of these local authorities, such as developing commuter transport plans and 'safer routes to school', the focus remains on the provision of infrastructure for, and information about, alternative modes of transport. In Cambridgeshire, this focus is a reflection of traditional approaches to transport provision (Marvin and Guy 1999a), a policy climate in which the benefits of particular schemes have to be accounted for in concrete terms, and financing arrangements which favour capital projects over support for non-capital schemes. Whether or not such measures can, by themselves, bring about a reduction or containment of car traffic growth, is a moot point. For example, in Cambridgeshire, the development of Park and Ride has increased the number of people arriving in the city centre by bus, but it has not led to a reduction in car traffic itself across the city centre, and despite provision of public transport facilities in Denver and Newcastle (NSW), fewer than 5 per cent of journeys in either city are made using public transport.

Despite the possible limitations of soft and persuasive demand management in isolation, engagement with hard demand management measures has been muted. In neither Denver nor Newcastle (NSW) have there been proposals to restrict car access to the city or increase the costs of driving in order to provide an incentive for using alternatives. In Cambridgeshire, various forms of hard demand management have been applied to the city of Cambridge, including a scheme which restricts access to the city centre, and parking charges have been increased, primarily as a revenue-raising exercise to fund the alternatives discussed above. More radical proposals, in which workplace parking levies or road-user charges are implemented by local authorities, have been sanctioned by central government. However, in Cambridgeshire, the political and pragmatic difficulties of such schemes have meant that they remain on the back-burner. Furthermore, in each of the case-studies, engagement with demand management has not led to the abandonment of plans to increase road capacity. Rather than being seen as an alternative to increasing provision for traffic growth, demand management measures are seen as an additional strategy for increasing the capacity for travel within urban areas. This suggests that, far from questioning the legitimacy of continued traffic growth in the face of its economic, social and environmental impacts, the assumption is still made that traffic growth is a necessary part of economic growth, and that to reduce the former is to challenge the latter. If, as argued above, reducing local emissions of greenhouse gases from the transport sector demands reductions, or at least containment, of the number and length of car journeys, these findings raise serious doubts about the extent to which climate change will be addressed at the local level, and the likelihood of achieving national objectives and international targets.

### *Energy management in the built environment*

Outside the land-use planning and transport sectors, local authorities play a significant role in managing energy in the built environment, both in the housing sector and within their own estate and operations. While land-use planning and regulation can affect the energy efficiency of new developments and buildings, additional measures, which local governments can influence or introduce, are required to improve the existing housing stock. Moreover, some local authorities own large quantities of housing stock and/or

office space, to which they can apply energy efficiency measures. In this section, we compare the experience of three of the case-studies in this book, Leicester, Denver and Newcastle (NSW), in addressing these issues, turning first to measures to manage energy use in the housing sector.

In Leicester, initiatives for energy management within the housing sector date back to the 1970s, and have been manifest in various experiments with energy supply, such as CHP and solar energy projects, as well as in programmes to improve the energy efficiency of housing and to encourage individuals to take energy conservation measures within the home. Concern among council members and officers about fuel poverty and the environmental impacts of energy use, the establishment of various bodies within the local authority, access to additional funding and the introduction by central government of the *Home Energy Conservation Act* have all been important factors in developing energy policy and measures within the housing sector. Likewise in Newcastle (NSW), the formation of an energy management agency within local government, the AMEIF, and access to additional funding through the CCP-Australia programme, have been central to the recent initiation of community initiatives, such as the energy town meeting, community energy workshops and the GAP

In each case, the CCP programme has been one factor which has created access to additional funding for these initiatives. However, the dependence of these initiatives on additional funding creates its own problems. First, such funding tends to be focused on innovation, so that there is little available for the continued support of (successful) projects. Second, the competitive nature of such funding means that as some local authorities gain, others will miss out (Guy and Shove 2000; Jones and Leach 2000). In Leicester, the focus of energy efficiency policy in the housing sector has been on improving the structure of existing buildings, on the basis of additional funds, and on providing individuals with information about measures they could implement to conserve energy. Such an approach clearly reflects the limited capacities for local authorities in the UK to directly influence domestic energy use. However, it is not clear whether such initiatives, which focus on technical fixes and individual action, will be effective in delivering substantial reductions in greenhouse gas emissions. This is implicitly acknowledged in the *Energy Sense* programme, which tries to address the social and institutional contexts of energy use, with some success. In Newcastle (NSW), community initiatives for energy management are at the embryonic stage, and it remains to be seen what shape they will take. In Denver, explicit action on energy management in the community has not been undertaken, for fear of opposition from the state government, which has explicitly banned any action on climate protection, and from the coal industry.

In contrast, in each of the three local authorities where energy management was examined in detail, significant progress has been made in reducing the use of energy within the council's own operations and estate. In Leicester, Denver and Newcastle (NSW), similar initiatives have been undertaken, including improving the energy efficiency of buildings and office equipment, educating staff about the use of energy and other resources, purchasing renewable energy, and co-sponsoring renewable energy demonstration projects. In each case, the initial rationale for action was based on potential monetary savings and the interests of particular individuals within the local authority. The implementation of energy efficiency measures has been assisted in each case by innovative financial mechanisms which allow a proportion of the monetary savings accrued to be reinvested in further initiatives. In this endeavour, each of the local authorities has benefited from rigorous means of accounting for energy savings and reductions in emissions of

greenhouse gases, although it is only in Denver that the CCP software has been used for this purpose.

However, there are also factors specific to each case which have promoted the in-house conservation of energy. In Denver, the local government has benefited from the mandatory financial contribution made by the local utility company to energy conservation measures, and from programmes on energy efficiency run by the Environment Protection Agency. In Newcastle (NSW), energy utilities have also been significant, promoting the development of renewable energy projects after changes to energy legislation in NSW which require that such companies reduce their emissions of greenhouse gases. Newcastle's leading role in CCP-Australia, and its demonstrated success in delivering reductions in energy use and financial savings, have also lent the energy agenda, and those supporting it, political credibility within the local authority. In Leicester, the energy management department, energy advice centre and Energy Agency were created using funding from external bodies, including the Energy Savings Trust and the European Commission. Energy management has also been encouraged by recent shifts in local government in the UK, as it fits both with the ethos of modernizing local government (see Chapter 4) and with approaches to sustainability which stress the need to set indicators and audit progress against them.

The CCP programme has perhaps had the most influence on the in-house management of energy, offering a means by which local authorities can model and measure their progress, providing connections to like-minded councils, and opening up possibilities for the external funding of initiatives. Of the three case-studies examined in this section, this is clearly the case in Denver, where the CCP software is used to account for the council's actions, and in Newcastle (NSW), where the CCP programme has given the energy management team additional political kudos and financial opportunities. In Leicester, the connection is less explicit, although the CCP programme has provided individuals with information, political weight and connections through which to access European funding. Nevertheless, local authorities have found their ability to act on reducing emissions of greenhouse gases from within their own operations and estate constrained. This is perhaps most acute in Leicester, where changes to local government financing and structure in the UK have meant that the managers of individual services, such as schools and hospitals, run their own budgets. At this scale, the financial gains of implementing energy efficiency measures are significantly reduced, and the costs of co-ordination and implementation increased. At the same time, the cost of energy has fallen substantially, and monetary savings can more easily be gained by shopping around between suppliers, rather than by reducing energy use. This points to a flaw in the approach adopted in each of these cases, and advocated by the CCP programme, namely, that in-house energy reductions result in financial gain. While this is intuitively sensible and desirable, problems arise if the return periods for gains are defined in the short-term, or if energy prices fall, so that measures which will have significant benefits in terms of climate protection but have high up-front costs are not considered. There is the danger that, once the 'easy fruit' has been picked, in-house energy management will be abandoned if its other goals are not made explicit and supported. Furthermore, whatever their size, local authorities face the challenge that their own use of energy is relatively minimal, and that in order to be effective in terms of climate protection, they need to influence energy use across the community, where, as argued above, the approaches taken so far – focusing on modelling and accounting for energy – may not be as easy to pursue or as successful. Local governments may need to

search for alternative approaches to energy conservation and urban sustainability in order to reduce local emissions of greenhouse gases from across the community.

## The local politics of climate change

Our case-studies suggest that the CCP programme has had some degree of success in achieving its objectives (listed in Box 11.1), but that significant challenges remain. First, while the programme continues to attract recruits, the case-studies in this book suggest that the level of participation amongst members is varied. This suggests that measuring the success of transnational networks of local authorities on the basis of the number of communities participating could be misleading, if, for example, their level of involvement is more like that of Milwaukee than Newcastle (NSW). Second, while the programme has been able to increase the capacity of local authorities to address climate change in some instances, this has been limited to those cases which have a pre-existing commitment to energy conservation or urban sustainability, raising questions about the applicability of the programme across different sorts of local authorities. Furthermore, where action on climate protection has been forthcoming in the wake of membership of the programme, such as in Denver or Newcastle (NSW), this has been due primarily to the financial and political resources which it offers, rather than on the basis of technical information or educational materials. This suggests that the model of policy learning and change adopted by the CCP programme does not adequately describe how governance takes place within this transnational network, an issue to which we return in Chapter 12. Third, there is some evidence to suggest that the programme has established a level of accountability for emissions of greenhouse gases, although this has been confined to those local authorities which have been most proactive in the programme, that is, Denver and Newcastle (NSW), and to in-house emissions monitoring and reporting. Our case-studies suggest that this approach may be ill-suited to developing and implementing climate protection policy across local communities, due in part to the issue of data availability, but also because of the problems in attributing emissions reductions to particular policy initiatives and the need to focus on sources of emissions which may be less easy to quantify. Moreover, whether or not such an approach will lead to an increased capacity to act is debatable. Finally, the CCP programme has been an active participant in international negotiations, and in each country from which our case-studies are drawn it has played an advocacy role, promoting the need for local approaches to climate protection, which in turn have led to the establishment of national CCP campaigns. However, the programme has not had any significant impact on either the level of attention given to local initiatives within international policy arenas, or on the ability of local government to address climate change in the key sectors of housing, transport and land-use planning.

**Box 11.1: CCP programme objectives**

- Recruitment of local authorities whose collective emissions of carbon dioxide are 10 per cent of the global total
- Increasing the capacity of local government to take action to protect the climate
- Establishing local accountability for emissions reductions
- Representing local government in international and national policy arenas

From the analysis given above, five key factors emerge which have shaped the impact of the CCP programme on local governments and the opportunities and constraints encountered in addressing local emissions of greenhouse gases. The first relates to the presence of committed individuals, both officers and politicians, for whom the environmental, social and economic impacts of energy use are considered important. However, individuals alone can not make local action on climate change a reality. Rather, they have to be positioned within the administrative and political structures of local government in such a way as to be effective. In some cases, such as Denver and Leicester, this means gathering support from across different departments. In others, such as Newcastle (NSW), one department has managed to have a significant impact on the policy direction of the council, because it has spoken to a wide agenda with which the whole council is concerned – the finances of the local authority and the regeneration of the local economy. In this area, the CCP programme has had some influence, both on the views and enthusiasms of individuals, and on the weight which is given to their arguments across the council. The second factor critical in shaping the extent and form of local climate protection initiatives is the availability of funding, either through internal financial arrangements or through access to external funding sources. Again, the CCP programme has had some influence here, through providing contacts, and, in the Newcastle (NSW) case, hard financial resources. What seems clear from these case-studies is that climate protection measures are not something undertaken using mainstream local government finances, although of course the day-to-day activities of local governments which are funded in this way may have positive impacts on reducing emissions of greenhouse gases indirectly.

The third factor relates to the powers of local government in the critical areas of land-use planning, transport and energy management. Although in each country from which the case-studies are drawn, the powers awarded to local government differ, in each case local government has at least some direct, and indirect, influence over these sectors. However, in each of the case-studies documented in this book, the use of direct influence has been limited by conflicting policy objectives (locally, regionally and nationally) and by a lack of guidance or consensus as to the weight which should be given to climate change considerations in local policy decisions. DeAngelo and Harvey (1998: 134) argue that 'there is considerable scope for effective action by municipal governments to reduce local greenhouse gas emissions by informal approaches which do not require formal jurisdictional authority'. In the case-studies presented here, many initiatives to address climate change locally have been based on voluntary or additional initiatives, rather than being part of the mainstream of council business. While such schemes, which often take the form of the provision of information and encouragement to local businesses and communities, may be effective in getting 'quick wins', our findings suggest that it is unlikely that they can address institutionalized patterns of energy use over the long term. Furthermore, the very nature of such schemes means that they can easily be sidelined or neglected within the local authority when changes of personnel or politics occur.

These case-studies illustrate also that the power to act on climate protection is no guarantee that such action will take place. A fourth critical factor in the local politics of climate change is how the issue is defined and understood. One of the advantages of local action on climate change, as argued by the CCP programme and other initiatives, is that it will have other dividends, such as reducing local air pollution, improving the local economy, enhancing the liveability of urban spaces, and addressing social and economic inequities. While there are undoubtedly synergies between reducing emissions of greenhouse gases and other environmental, social and economic goals, there are also conflicts. At one level,

conflicts emerge between different parts of the energy agenda. For example, reducing greenhouse gases produced from vehicles through promoting 'greener' fuels will not necessarily reduce congestion, and hence enhance the liveability of urban places. At another level, these case-studies show that where protecting the climate conflicts with other social and economic goals, such as economic regeneration or the interests of particular local industries, any political will towards the former disappears.

The final factor which emerges from these case-studies as shaping the opportunities and constraints for local action on climate change is the extent to which the political will to address such conflicts exists. While local initiatives to address climate change continue to stress the win–win potential of such initiatives, the danger is that only those measures which constitute the lowest common denominator will be implemented (Gibbs *et al.* 1998: 1363), leaving the majority of local emissions of greenhouse gases untouched. Such conflicts not only reveal the particular politics of certain places, but point to fundamental dislocations between the different aims of sustainable development (Owens and Cowell 2002).

These findings suggest that approaches to local climate protection which rest on assumptions about the need for more knowledge of local emissions of greenhouse gases, the transferability of best practice and the compatibility of different elements of sustainable development under the banner of climate protection, do not suffice once the agenda moves from in-house energy use to wider issues about energy consumption and production. Rather than being a technical issue regarding the need for more information or better practice, or an issue of changing behaviour within existing institutional structures, the interpretation and implementation of climate protection locally is a political issue, where different actors and groups seek to have their understanding of the problem, and its solutions, acted upon (Hajer 1995). As Flyvbjerg argues, 'power does not *seek* knowledge … [r]ather power *defines* what counts as knowledge' (1998: 27, original emphasis). The case-studies in this book illustrate that the politics of climate change is not merely a matter of international negotiations and national policy development but is also taking place at a local scale, through different policy sectors, as struggles emerge over what acting to protect the climate should mean (Guy and Marvin 1999). However, the local politics of climate change is not taking place only within a discrete sphere of local governance, but through vertical relations of power and governance between the subnational and national state, and through transnational networks of local government. In Chapter 12, we consider the implications of our findings for understanding global environmental governance.

# 12 Transnational networks and global environmental governance

The case-studies in this book illustrate that the governance of climate change is a complex, multilevel process. Traditional analytical divisions between international and domestic politics, local, national and global scales, as well as state and non-state actors, no longer apply. Our analysis demonstrates that the politics of climate change are not merely a matter of international negotiation and national policy development, but are also taking place locally. However, the local governance of climate change is not conducted at a discrete scale, but is constructed by relations of power and influence between subnational and national state and non-state actors, and through multilevel, transnational networks. In this chapter, we evaluate the CCP campaign as one example of a multilevel, transnational network. We focus on how the CCP network has been created and maintained, and how processes of policy learning and change are taking place. We then turn to a consideration of the relationship between networks, governance and the state. We argue that although the CCP programme epitomizes the multilevel nature of climate change governance, this does not equate to a diminishing role for the state in shaping how the issue of climate change is interpreted, contested and acted upon. Finally, we revisit debates about the nature of global environmental governance and assess the implications of our findings for future research on the politics of global and local sustainability.

## Network governance

In Chapter 2, we argued that debates within the literature on policy networks and transnational networks/global civil society provide a basis for analysing the nature of the CCP programme as a transnational network of local authorities. In particular, these debates allow us to assess how participation in the CCP programme is secured and maintained, and how the programme promotes policy learning and change. We find that those authorities most effectively engaged with the network are mobilized more by the financial and political resources it offers than by access to technical and best practice information. We find also that the network has had limited success in promoting policy learning and change among its members, in large part because it has adopted a rational view of these processes, emphasizing the importance of information in changing behaviour, rather than the need to challenge existing interpretations of what acting on climate change means.

### *Participation*

As documented in Chapter 3, one of the objectives of the CCP programme is the recruitment of local authorities whose collective emissions of greenhouse gases represent 10 per

cent of the global total. Within the literature on policy networks, the formation of networks and their continuation is seen as a result of mutual dependence, both on specific material resources and because in order to achieve policy outcomes with a minimal level of conflict, government 'needs the assistance and co-operation of other groups' (Smith, A. 1997: 35). However, in the case of the CCP programme, material resource interdependencies do not necessarily provide the basis for network formation, stability and change. In their study of transnational local authority networks in Europe, Benington and Harvey (1999: 216) found that 'resource exchange, and resource dependency, within our networks included not just material resources (such as money or information) but less easily measurable resources (such as knowledge, intelligence, values, vision, judgement). In fact, in many cases the networks were not so much involved in resource exchange as resource production'. Likewise, the exchange and production of information and different problem 'framings' are crucial to the life of transnational networks (Keck and Sikkink 1998). In the case of the CCP programme, material and non-material resources have been central to the formation of the network and to maintaining participation amongst local authorities.

On the basis of our case-studies, we argued in Chapter 11 that those local authorities within which the CCP programme had the most impact were those that were best able to capitalize on both the material and non-material resources offered by the network. For example, Denver and Newcastle (NSW) have benefited, financially and politically, from sharing their expertise across the network. Officials in each of these cities value the CCP programme not merely as a source of information, but also as a vehicle for demonstrating environmental leadership. In general, we found the CCP programme has had the greatest impact among local authorities where established systems of monitoring and reporting of local emissions have led to frequent interactions between the local authority and the CCP programme; where the programme has created access to additional financial resources; and where individuals could gain knowledge and kudos through participation in the programme. We can think of these local authorities as having 'open' connections to the network, creating thick and dense webs of interactions, making it more likely the network will be maintained. However, where such resources are not available, or not seen as useful within the local authority due to internal and external pressures, the mutual dependence of the local government and the programme breaks down, so that network connections can not be established or are effectively 'closed'. This raises significant questions about the extent to which any such network can move beyond the participation of a few elite local authorities. For example, given that the additional funding, which is facilitated through network participation, is usually available on a competitive basis, only those local authorities which win these competitions can benefit from this resource, and may thus be persuaded that continued participation is worthwhile. We are not suggesting that the CCP programme itself comprises only leading local authorities; the limited case-study material presented here does not warrant such a conclusion. However, we would argue that closer attention needs to be paid to the sorts of local authorities becoming involved in such networks, and the implications this has for how, where and why urban sustainability is taking place.

### *Policy learning and change*

In addition to securing and promulgating the network, a critical objective of the CCP programme has been to build local capacity to address climate change, or, in other words, to create policy learning and change on this issue locally. Models of social or policy

learning 'stress the critical importance of ideological factors, discourse, rational argument and belief systems in bringing about policy change … whilst at the same time taking cognisance of the interplay and importance of particular political forces and bureaucratic interests' (Jordan and Greenaway 1998: 670). In one approach, policy learning is conceptualized as a rational process, where, in response to additional information, thinking and action on a problem are changed (Jenkins-Smith and Sabatier 1994; Sabatier 1998). Alternatively, the process is seen as more discursive, so that not only is new knowledge created about a policy problem, but the nature and interpretation of the policy problem is challenged and reframed (Hajer 1995; Keck and Sikkink 1998; Lipschutz 1997a; Owens and Cowell 2002; Owens and Rayner 1999).

The CCP programme is premised on the first approach, namely that increasing knowledge of the local contribution to climate change, measures which can be taken locally to address the problem, and the potential co-benefits involved, will result in policy change and action. This is demonstrated by the milestone model, where, in a cyclical process, reporting and forecasting local greenhouse gas emissions leads to the creation of a reduction target, implementation plan, measures to address the problem and the monitoring of progress. The emphasis within the programme on increasing the capacity to monitor and forecast emissions, through the development of software tools for this purpose, and on spreading best practice ideas, rests on the assumption that increased knowledge about the issue, and potential solutions, will create policy change in a relatively straightforward manner. However, our case-studies suggest that, where policy learning has taken place, it has been more akin to a discursive process. As discussed in Chapter 11, the CCP programme has had the greatest impact in those cities with a pre-existing energy conservation agenda. In these cases, rather than providing new knowledge, the CCP programme has aided the reframing of energy issues in terms of climate change and urban sustainability. This has meant 'localizing' climate change; reframing a problem that is generally viewed as a global issue in a way that makes it meaningful to local decision-makers (Betsill 2000, 2001). In the main, policy learning has not necessarily led to a better understanding of the local dimension of climate change, and its implications across different sectors. Rather, policy-makers increasingly recognize that climate protection is consistent with (some) other (local) issues and objectives.

At the same time, our case-studies suggest that the extent of policy learning and change among CCP participants has been limited. One, relatively superficial, level of learning and change occurs through discourse structuration, where 'the credibility of actors in a given domain requires them to draw on the ideas, concepts and categories of a given discourse' (Hajer 1995: 60). We can link the CCP network to this type of learning in all of the case-studies except Milwaukee. In each of the other cases, the rhetoric of climate protection has entered policy rationale in the sectors of land-use planning, transport, and energy management in the built environment. More meaningful policy learning and change is evident when a given discourse is translated into concrete policies and institutional arrangements or where 'issues are reframed, or selected, organised and interpreted in new ways' so that what previously was taken for granted is problematized (Owens and Cowell 2002: 170). Our case-studies suggest that such instances are rare. In Newcastle (NSW), where the CCP programme appears to have had the greatest impact, the 'nature and terms of the debate' concerning corporate responsibility and urban sustainability have begun to change within local policy-making arenas. However, among the case-studies documented in this book, this is an exception, and whether it will lead to significant change in the areas of transport and land-use planning remains to be seen.

There are two related explanations for the limited nature of policy learning and change among the CCP participants. First, where new discourses concerning the role and nature of local responses to climate change have been created and accepted, this has frequently been through particular individuals or groups and has failed to spread through the local authority. In part, this reflects the lack of 'open' connections between local authorities and the CCP programme, through which new understandings, or discourses, of energy, urban sustainability and climate change could be created and reinforced. Second, the local politics of climate change involves multiple policy communities and issue networks, many of which pre-date concerns for climate change specifically and which are entrenched around particular policy sectors. New discourses about the need to reconsider, for example, the relationship between economic growth and traffic growth, in light of local responsibilities to protect the climate have made little headway within the dominant policy community promoting business as usual, though are being voiced within a broader issue network surrounding the transport policy sector. Likewise, while mitigating climate change has become an additional rationale for improving home energy efficiency, rhetoric and action remains focused on social and economic concerns. This raises questions about the extent to which transnational networks can establish new, local, communities of interest around particular agendas, and implies that processes of policy learning promoted by transnational networks are more contested and conflictual than some authors suggest.

Given that the local politics of climate change can be characterized as a 'policy mess', where a range of policy networks across different sectors have interest in, and influence over, the issue (O'Riordan and Jordan 1996; see Chapter 2), it is unsurprising that we should conclude that the CCP programme is one of a range of actors shaping emerging and existing understandings of the policy problem. In this situation, the precise impact of the programme is impossible to ascertain, although arguments about its relative importance and effectiveness can still be made. What is clear, however, is that the governance of climate change within particular places is being conducted through a range of networks, which operate within, between and across multiple scales. In the next section, we consider the role of the CCP programme in the multilevel governance of climate change, and in particular its relationship to the state.

## Governance, networks and the state

Traditional divisions between state and non-state, local, national and global, are disrupted by the politics of climate change. In Chapter 2, we noted the shift from government to governance, whereby political authority is being redistributed upwards, downwards and outwards, creating a system of multilevel governance in which governments play a less central role in governing. Such shifts are evident in climate change politics, where authority for making decisions related to the mitigation of greenhouse gas emissions has been redistributed upwards, to international organizations and transnational networks, downwards to cities and regions, and outwards to non-state actors. As Gandy (1999: 63) argues, in light of the environmental risks, the capacity of the state for intervention is circumscribed as it becomes 'increasingly dependent on other structures and organizations dispersed through society'. While the nation-state may be responsible for legitimating climate risks and for their alleviation, this is a task it can not complete without addressing the source of risks, in this case primarily the use of energy, and without the involvement of the institutions and agents responsible for that use: industries and communities (Beck 1992; Bulkeley 2001b). In turn, non-state institutions and actors, which operate at

different scales across traditionally discrete policy sectors, share responsibility with the state for defining problems and implementing solutions. The CCP programme is one element in the multilevel governance of climate change, where the roles and responsibilities of state and non-state actors at all levels are being reconfigured. We argue that the relationship between the CCP programme and the state is complex, given that the network acts simultaneously locally and globally, as a non-state and a state actor. On the one hand, the CCP network is undertaking activities traditionally assumed to be the sole province of the state. On the other hand, the state is central to the governance of climate change in general, and to the success or otherwise of the CCP programme, as a key determinant of local capacity for, and interest in, promoting the climate agenda.

### *Multilevel governance and the CCP programme*

In multilevel systems, 'institutional relationships do not have to operate through intermediary levels but can take place directly between, say, transnational and regional levels, thus bypassing the state level' (Peters and Pierre 2001: 132). At the international climate change negotiations, the CCP network represents local ambitions and achievements in the area of climate protection, highlighting the role of local authorities in addressing climate change, which most nation-states fail to fully appreciate given the fact that few of them report on actions at the local level in their national communications under the UNFCCC. In this way, the CCP bypasses the nation-state and gives local authorities the opportunity to take a position that may go against that of their national governments (as in the case of Australia and the US), illustrating that the nature of climate change governance can not be read hierarchically. The CCP network is also taking on functions that are typically presumed to rest with national governments, such as setting greenhouse gas emissions targets for participants as well as requirements for reporting and monitoring emissions.

However, as well as acting around the state, the CCP programme is in part a state-based organization, given that its membership comprises local governments and that it often works closely with national governments and state agencies. In Australia, CCP officials have entered into a partnership with national and local governments, and Environs, an NGO, to adapt the CCP software to local circumstances and to ensure that local authorities have access to this tool. As noted in several of the case-studies, the CCP programme also plays an important role in securing financial resources for local climate protection. Although these resources often come directly or indirectly from the state (national or regional), they would not have been made available to local authorities without lobbying on the part of the CCP. Furthermore, in each of the countries from which our case-studies are drawn, advocacy from the CCP programme has led to the creation of national CCP campaigns, in which the nation-state plays a central role.

Within this multilevel system, although states increasingly rely on non-state actors and networks such as the CCP programme, it is equally clear that the state has been central in determining how climate change has been interpreted, and the extent to which actions have been implemented. At the local level, the case-studies demonstrate that the state is sometimes the source of innovation in climate protection. Denver's interest in climate protection, and its awareness of the link between energy use, air quality and climate change, evolved independently from and in advance of the national debate over climate change, and it is arguably a function of the leadership of Mayor Webb and the

availability of financial and administrative resources. In Newcastle (NSW), Newcastle (UK) and Leicester, local government research and initiatives on urban responses to climate change took place ahead of the interest of national governments or the CCP programme on this issue. Moreover, nation-states have significant influence over the capacity for the development and implementation of local climate protection policies in the planning, transport and energy sectors. In the UK, guidance from the national government encourages local planners to consider energy use and the location/design of development. However, since it does not *require* such considerations, local officials feel powerless to deny a development application based solely on these grounds. The deregulation of local bus transport in the UK in the mid-1980s has meant that local authorities have few powers through which they can directly influence the delivery of public transport systems. Similarly, local authorities in the US are constrained by the fact that transportation is often governed at the regional level. The case of Newcastle (NSW) demonstrates both the benefits of synergy between federal, state and local policies, and the opportunistic nature through which such circumstances arrive. Legislation in NSW required that utilities investigate ways to improve energy efficiency and to promote energy conservation. In Newcastle, these programmes have enabled the development of demonstration schemes for renewable energy and created a consumer market for green energy. In turn, Newcastle's initiatives and involvement with the CCP programme have provided the federal government with a model upon which to base the further involvement of local governments in addressing climate change, and a means through which to displace responsibility.

Our analysis of the CCP programme shows that the 'hollowing out' of the state and shift towards multilevel governance on the issue of climate change does not necessarily signal a weakening of the state. The role of the state is not governed by some determinate and finite notion of capacity, but rather through negotiations in which actors and institutions mutually define their respective roles. In this way, environmental politics is an argumentative struggle in which 'actors not only try to make others see problems according to their views but also seek to position other actors in a specific way' (Hajer 1995: 53). Shifts in the scale of state activity and authority should therefore be viewed as a reorganization of the social relations between actors, a reorganization which may reinforce the power of the state (Jessop 1994; MacLeod and Goodwin 1999; Swyngedouw 2000).

Ironically, although the CCP programme is part of the shift towards the multilevel governance of climate change, its strategy is based largely on the assumption that (local) government has primary responsibility for climate protection at the local level, and is independent of processes taking place at other scales. Its members are local governments, and it is representatives of these governments that interact with the network. As noted in the case-studies, this has led to a situation in which local authorities tend to focus on monitoring and controlling emissions generated through their own operation and estate, rather than within the broader community. The CCP network has not recognized the shift from government to governance, of which it is a part, and has thus not engaged the range of other policy communities through which local governance on climate change takes place. By not working directly with local businesses or multinational corporations, for example, the CCP programme has had little opportunity to shift debates about the relationship between the economy and the environment, which in turn hinders the ability of local government to implement climate protection policies in the energy, transport and planning sectors.

## Understanding global environmental governance

The case-studies in this book challenge conventional views about the nature of environmental governance. In Chapter 2, we argued that traditional notions of environmental governance are hierarchical, viewing the process as either 'top-down' (in the case of international relations) or 'bottom-up' (in the case of urban sustainability). As demonstrated throughout this book, climate change is governed through processes and institutions operating and interacting at a variety of scales ranging from the global to the local. To understand global environmental governance as either negotiated at the international level and then trickled down to other institutional arenas as responsibilities are assigned and implemented, or to see local initiatives as the result of isolated actions by more ecologically rational institutions, is too simplistic.

For international relations scholars, and regime theorists more specifically, environmental governance begins with the negotiation of international agreements, which are then taken home by national governments to be implemented (or ignored). Clearly processes at the global level are important in the governance of environmental issues, particularly in establishing common sets of norms and rules for behaviour (Betsill 2002). However, by assuming a clear separation between state and non-state actors and viewing the world in terms of hierarchical, territorially discrete, scales, such models miss emerging forms of multilevel governance involving transnational networks that are simultaneously global and local and minimize the role of local actors in addressing global problems. Local authorities, which are largely absent from explicit consideration within this framework, are assumed to act in response to directives from the central state as part of the national implementation of these international agreements. The case-studies in this book confirm that, indeed, local authorities exercise a degree of influence (with significant variation) over greenhouse gas emissions through their activities in the areas of energy, transport and land-use planning, and thus are important actors in the implementation of national and international climate protection policies. Unfortunately, the role of cities in climate protection has been neglected in the context of international climate change negotiations. Despite ICLEI's regular attendance and participation, neither the UNFCCC nor the *Kyoto Protocol* makes reference to the role of local authorities in mitigating climate change, and at the national level there is considerable variation in the extent to which states recognize and support local climate protection efforts.

At the same time, the case-studies demonstrate that the significance of cities in the governance of global climate change goes beyond their role in implementing policies established at other levels. They represent an important site for the governance of global issues in their own right. In the area of climate change, cities have been innovators in terms of climate protection policy and practice, often in the absence of any international or national policy requiring them to do so. In all of our case-studies, the development of climate change policy has not been the direct result of a linear process of international policy formulation, national policy adoption and local implementation. Neither has it been the sole result of new 'glocal' forms of governance conducted through transnational networks. Rather, the process is more chaotic, fragmented and opportunistic, shaped by institutions and actors operating across different policy sectors, at and between different levels of governance. While it is clear that cities are important actors in the governance of climate change, the CCP experience indicates that it would be naïve to assume that climate change can be addressed entirely at the local level. Many analyses of urban sustainability, with their inward focus and optimistic assertions of the influence of local

government, also miss the shifts taking place towards multilevel governance and create little opportunity for recognizing the role of international and transnational actors, let alone transnational networks of local governments, in environmental governance. Moreover, such approaches ignore the particular social, political and economic context in which local climate protection efforts take place, and which, as demonstrated in the case-studies, has significant implications for the capacity of local authorities to develop and implement climate change policies.

Inevitably, this book has raised a number of questions about the nature of global environmental governance. The CCP programme is just one of many emerging networks of local governments seeking to address climate change and other issues of environmental sustainability. Further research is needed on the nature of these networks, the processes of governance taking place within them, and their interaction with state, non-state and intergovernmental organizations, in order to more fully capture the multilevel nature of global environmental governance. If some networks are proving to be more effective than others in promoting policy learning and change, in local, national or international institutions, why is this the case? How are debates on environmental sustainability shaping, and being shaped by, debates in various policy sectors across scales, and what are the implications for developing and implementing international agreements and national objectives? Is there a role for international institutions in facilitating local action, and, if so, how could this take place?

Our analysis of the CCP programme suggests that the simultaneous globalization and localization of the sustainability agenda need not necessarily be in conflict. However, our case-studies also make it clear that the trend toward multilevel governance requires a full and critical treatment of the possible inconsistencies and contradictions between the aims of sustainable environmental policy in different sectors, over different scales, and between different places. Without such considerations, difficult choices will continue to be sidestepped. Defining global environmental issues as collective action problems excludes consideration of the social processes that give rise to these problems in the first place. Similarly, representing the local through idealized notions of sustainable cities ignores the conflicting claims about the nature of urban development. It is essential to examine the social, political and economic processes that govern understandings of the local and the global, and to bring into plain view the challenges for the relations between these scales that climate change poses. 'Thinking globally' and 'thinking locally' will provide us with only partial answers to ensuing questions of global environmental governance. A more acute, and potentially more effective, understanding of environmental politics will need to maintain a perspective between these scales, and to recognize its multilevel and multidimensional nature.

# Appendix

## Members of the CCP programme

(*ICLEI 2002a, 7 May*)

**Local authorities listed under country**

***Argentina***

Buenos Aires

***Austria***

Graz
Linz

***Australia***

Adelaide
Alice Springs
Armadale
Armidale
Australian Capital Territory
Ballarat
Bankstown
Banyule
Bassandean
Baulkham Hills
Bayswater
Belmont
Blacktown
Boroondara
Botany Bay
Brighton
Brisbane
Buloke
Bunbury
Burnside
Caboolture
Calliope
Caloundra
Cambridge
Campaspe
Canning
Canterbury
Cardinia
Carrathool
Casey
Central Goldfields
Charles Sturt
Claremont
Cockburn
Coffs Harbour
Concord
Cottesloe
Darebin
Douglas
Dubbo
East Fremantle
Frankston
Fremantle
Gannawarra
Gladstone
Gold Coast
Gosford
Gosnells
Greater Bendigo
Greater Dandenong
Greater Geelong
Greater Shepparton
Hawkesbury
Hepburn
Hobart
Hobsons Bay
Hoddon

Holdfast Bay
Hornsby
Hume
Hurtsville
Ipswich
Joondalup
Kalamunda
Knox
Kogarah
Ku-ring-gai
Kwinana
La Trobe
Lake Macquarie
Leeton
Leichhardt
Lithgow
Liverpool
Loddon
Logan
Macedon Ranges
Mandurah
Manly
Manningham
Mareeba
Marion
Marooch
Maroondah
Marrickville
Melbourne
Melville
Miriam Vale
Mitcham
Monash
Moreland
Mosman
Mount Alexander
Mundering
Murweh
Muswellbrook
Narrandera
Nedlands
Newcastle
Nillumbik
Noosa
North Sydney
Norwood Payneham & St Peters
Onkaparinga
Parramatta
Penrith
Peppermint Grove
Perth
Pine Rivers
Pittwater
Playford
Port Adelaide Enfield
Port Phillip
Port Stephens
Redland
Rockdale City
Rockingham
Salisbury
Serpentine-Jarrahdale
South Perth
South Sydney
Southern Metropolitan Regional Councils
Stirling
Subiaco
Sutherland
Swan
Sydney
Tamworth
Tea Tree Gully
Tweed
Unley
Vincent
Warringah
Warrnambool
Waverley
West Torrens
Whittlesea
Willoughby
Wingecarribbee
Woolahra
Woolongong
Yarra Ranges

***Bangladesh***

Dhaka

***Brazil***

Belo Horizonte
Betim
Curitiba

Goiânia
Niterói
Porto Alegre
Rio de Janeiro
São Paulo
Volta Redonda

***Canada***

Abbottsford
Anmore
Banff
Bathurst
Boucherville
Bowen Island
Brantford
Burnaby
Calgary
Campbell River
Canmore
Central District of Kootenay
Chelsea
Cold Lake
Collingwood
Columbia Regional District
Coquitlam
Delta
Didsbury
District of Kootenay
District of Maple Ridge
District of Pitt Meadows
District of West Vancouver
Dorchester
Dundas
Edmonton
Federation of Prince Edward Island Municipalities, PEI
Fort Simpson
Fort Smith
Gander
Gondola Point
Grand Centre
Greater Vancouver Regional District
Guelph
Halifax Regional Municipality
Hamilton
Hudson's Hope
Iroquois Falls
Kamloops
Kelowna
Kitchner
Lachine
Langley
Laval
Lindsay
Lions Bay
London
Mississauga
Montréal
Montréal-Est
New Glasgow
New Westminster
North Vancouver City
North Vancouver District
Okotoks
Ottawa
Peel
Perth
Peterborough
Port Alberni
Port Hope
Port Moody
Prince George
Québec City
Quispamisis
Regina
Richmond Hill
Saanich
Scugog
South Frontenac
South Perth
Stratford
Strathcona
Sudbury Region
Surrey
Swan River
The Pas
Thunder Bay
Toronto
Vancouver
Victoria
Welland
Whistler
Whitehorse

Winnepeg
Yellowknife
York Region

***Chile***

Concepción
Santiago
Tome

***China***

Shenyan

***Czech Republic***

Krnov
Prague

***Denmark***

Copenhagen

***Fiji***

Suva

***Finland***

Anjalankoski
Association of Finnish Local Authorities
Espoo
Hameenlinna
Hattula
Hauho
Helsinki
Helsinki Metropolitan Area
Iitti
Joensuu
Kaarina
Kalvola
Kaunianinen
Kiiminki
Kiukainen
Kotka
Kouvola
Lahti
Laitila
Lappenranta
Leito
Mietoinen
Mikkeli
Mynämäki
Naantali
Oulu
Paimio
Pietarsaari
Pori
Raisio
Raumu
Renko
Riihimäki
Tampere
Toijala
Turku
Uusikaupunki
Vantaa
Vihti

***Germany***

Bautzen
Berlin
Berlin-Köpenick
Dresden
Düsseldorf
Erfurt
Erlangen
Freiburg
Hannover
Heidelberg
Ilmkreis
Karlsruhe
Leipzig
Lübeck
Rheda-Wiedenrück
Saarbrücken
Schwerin
Viernheim

***Greece***

Kallithea

***Hungary***

Budapest
Miskolc

Siófok

***India***

All India Institute of Local Self Government
Bhavnagar
Calcutta
Hyderabad
Jabalpus
Ludhiana
Sanglio
Vadodra

***Indonesia***

Bandung
Bogor
Cirebon
Yogyakarta

***Ireland***

Dublin

***Italy***

Bernalda
Bologna
Caserta
Cosenza
Firenze
Florence
Livorno
Milan
Naples
Palermo
Rome
Rovigo
Torino
Venice

***Japan***

Aichi Prefecture
Chiba City
Itabashi
Kamakura
Koshigaya
Kumamoto
Kyoto City
Nagoya
Saitama Prefecture
Sendai
Seto
Yamanashi

***Kenya***

Mombasa
Thika

***Latvia***

Riga

***Malawi***

Zomba

***Mexico***

Cuajimalpa
Mexico City
Querétaro
San Luis Potosí
Tlalpan

***Nepal***

Kathmandu

***Netherlands***

Amsterdam
Rotterdam

***New Zealand***

Hamilton
Waitakere

***Norway***

Kristiansand
Oslo

***Peru***

Cajamarca

***Philippines***

Baguio
Bohol Province
Butuan City
Cagayan de Oro
Cebu
Dagupan
Makati
Mandaue
Naga
Puerto Princesa
Tagbilaran

***Poland***

Gdansk
Katowice
Warsaw-Mokotow
Warsaw-Zoliborz
Wroclavia

***Portugal***

Almada
Lisbon
Setúbal

***Romania***

Vatra Dornei

***Russia***

Kaliningrad

***Slovenia***

Ljubljana

***South Africa***

Cape Town
Durban
East London
Johannesburg
Kimberley
Potchefstroom
Saldanha Bay
Tshwane

***Spain***

Barcelona
Manresa

***Sweden***

Göteborg
Stockholm
Växjö

***Switzerland***

Lucerne
Zürich

***Uganda***

Entebbe
Gulu
Jinja

***UK***

Aberdeen, Scotland
Birmingham
Bristol
Burnley Borough
Bury
Cambridgeshire County
Chesterfield
Daventry District
Eastleigh
Exeter
Hampshire County
Kirklees
Leicester
Manchester
Newcastle upon Tyne
Sheffield
Swale Borough
Swansea

***Ukraine***

Lviv

***US***

Alachua County, Florida

Albuquerque, New Mexico
Amherst, Massachusetts
Ann Arbor & Washtenaw County, Michigan
Arcata, California
Arlington Country, Virginia
Arlington, Massachusetts
Aspen, Colorado
Atlanta, Georgia
Augusta, Maine
Austin, Texas
Berkeley, California
Boston, Massachusetts
Boulder, Colorado
Brattleboro, Vermont
Bridgeport, Connecticut
Brookline, Massachusetts
Broward County, Florida
Buffalo, New York
Burien, Washington
Burlington, Vermont
Cambridge, Massachusetts
Carrboro, North Carolina
Chapel Hill, North Carolina
Charleston, South Carolina
Chicago, Illinois
Chittenden County, Vermont
Chula Vista, California
College Park, Maryland
Corvalis, Oregon
Dane County, Wisconsin
Davis, California
Decatur, Georgia
Delta County, Florida
Denver, Colorado
Duluth, Minnesota
Durham, North Carolina
Fairfax, California
Fairfield, Connecticut
Fort Collins, Colorado
Georgetown, South Carolina
Gloucester, Massachusetts
Hennepin County, Minnesota
Hillsborough County, Florida
Honolulu, Hawaii
Huntington, New York
Ithaca, New York
Keene, New Hampshire
King County, Washington
Little Rock, Arkansas
Los Angeles, California
Louisville, Kentucky
Lynn, Massachusetts
Madison, Wisconsin
Maplewood, New Jersey
Medford, Massachusetts
Memphis, Tennessee
Mesa, Arizona
Miami Beach, Florida
Miami-Dade County, Florida
Milwaukee, Wisconsin
Minneapolis, Minnesota
Missoula, Montana
Montgomery County, Maryland
Mount Rainer, Maryland
Mount Vernon, New York
Multnomah County, Oregon
Nashua, New Hampshire
New Haven, Connecticut
New Orleans, Louisiana
New Rochelle, New York
New York, New York
Newark, New Jersey
Newton, Massachusetts
Northampton, Massachusetts
Oakland, California
Olympia, Washington
Orange County, Florida
Orange County, North Carolina
Overland Park, Kansas
Pawtucket, Rhode Island
Petaluma, California
Philadelphia, Pennsylvania
Portland, Maine
Portland, Oregon
Prince George's County, Maryland
Ramsey County, Minnesota
Riviera Beach, Florida
Sacramento, California
Saint Paul, Minnesota
Salt Lake City, Utah
San Diego, California
San Francisco, California
San Jose, California
Santa Cruz, California
Santa Fe, New Mexico

Santa Monica, California
Santa Rosa, California
Saratoga Springs, New York
Schenectady County, New York
Seattle, Washington
Sebastapol, California
Somerville, Massachusetts
Spokane County, Washington
Spokane, Washington
Springfield, Massachusetts
Suffolk County, New York
Takoma Park, Maryland
Tampa, Florida
Toledo, Ohio
Tompkins County, New York
Tucson, Arizona
Washtenaw County, Michigan
Watertown, Massachusetts
West Hollywood, California
Westchester County, New York
Williamstown, Massachusetts

***Vietnam***

Hanoi

***Zimbabwe***

Chegutu
Gweru
Harare
Masvingo
Mutare

# Notes

## 2 Global environmental governance

1 Throughout this book, the term transnational refers to activities/institutions/networks which take place across the boundaries of nation-states. This is different from the term 'international', which refers to a particular level of activity primarily in the realm of relations between nation-states and their governments (Goldstein 2001).
2 The European Sustainable Cities and Towns Campaign is an umbrella network, in that it represents different transnational networks of subnational local authorities concerned with sustainability, although individual local authorities pledge their support to the Campaign by signing the Aalborg Charter on local sustainability.
3 As an outcome of the 1972 Stockholm Conference on the Human Environment, in 1976 Habitat I was held in Vancouver to discuss local environmental problems. After Rio, the issue of urban environmental problems was once more on the international agenda and in 1996 the UN General Assembly convened Habitat II in Istanbul. The conference had a broad agenda, and faced considerable challenges in reaching agreement on a definition of sustainable urban development acceptable to different countries and communities. Commentators suggest that environmental issues were neglected in favour of more pressing issues concerning shelter and poverty (Elander and Lidskog 2000: 41).
4 Whether or not it is possible, in complex policy arenas in particular, to assess the extent and nature of policy learning and change in response to particular events, decisions or individuals, is a moot point. One approach, taken by Hajer (1995), is to argue that policy learning and change can be detected through discourses about the nature of problems and their solutions. A degree of 'learning' takes place once the rhetoric of the need to address a particular problem is articulated, though more substantive changes, to institutions and practice, are seen as necessary before true learning and change can said to have taken place. We will consider these issues again in Chapter 12.

## 3 The politics of climate change: global to local

1 These included a severe drought in the US, hurricanes in the Caribbean, and other extreme climatic events across the world, as well as a statement by the chief climate scientist at NASA, James Hansen, to the US Senate that climate change was a real issue which demanded action (Paterson 1996).
2 The First World Climate Conference was held in 1979 by the international atmospheric science community and attracted little political attention (Paterson 1996: 27).
3 Ozone-depleting substances, CFCs and hydroflurocarbons are also greenhouse gases.
4 It should be noted that political debate had already begun in several nation-states, including the US before 1988. However, the political will to take action on climate change increased significantly after 1988.
5 The EEC was created by the Treaty of Rome in 1957. In 1993, the Treaty of Maastricht created the EU, including a reformed Treaty of Rome and the renamed EC, as well as a common foreign and security policy and a common home affairs and justice policy (Haigh 1996). Officially, it is currently the EC which is legally responsible for climate change policy within the EU (Haigh

1996), however, as the term 'EU' climate policy is frequently used in the literature on climate change politics and in the media, this term will be adopted in this book for the period post-1993.

6 The COP is part of the institutional machinery of the UNFCCC (Grubb 1999: 41). It is 'charged both with sorting out all the issues which could not be resolved in the time span of the Convention negotiations, and with reviewing progress in the light of expanding knowledge and changing circumstances; it is the central body with authority to determine what happens, when and how' (Grubb 1999: 41). The COP first met in 1995, after the UNFCCC came into force, and has been held annually since that date.

7 Under the *Kyoto Protocol*, each of the EU member countries was assigned a commitment of reducing its greenhouse gas emissions 8 per cent below 1990 levels by the first commitment period (2008–2012). However, member states have agreed to achieve the target jointly as permitted under Article 4 of the Protocol and have negotiated new commitments among themselves with the aim of achieving the Kyoto target for the EU as a whole. For example, the UK is required to reduce its emissions 12.5 per cent below 1990 levels under the EU 'bubble'.

8 Sinks refer to biotic masses, such as forests, that absorb carbon dioxide from the atmosphere.

9 These positions are a caricature of more complex policy approaches, which shifted with time, the issues under consideration and the particular policy sectors and policy networks involved.

10 For the year 2001–2002, these rates were (p/kWh): electricity (not including new renewable and CHP schemes), 0.43; coal, 0.15; natural gas, 0.15; liquid petroleum gas, 0.07. The levy is forecast to raise around £1 billion in 2001/2002, all of which will be returned to business through a 0.3 percentage point cut in employers' National Insurance Contributions and £150m of additional support for energy efficiency measures (HMCE 1999).

11 The GCC disbanded in early 2002. According to its website, '[t]he industry voice on climate change has served its purpose by contributing to a new national approach to global warming' (GCC 2002).

12 Because many urban areas are experiencing considerable growth, emissions reductions are often calculated on a per capita basis.

13 The term 'energy efficiency' refers to measures which seek to improve the effectiveness of energy use, while the term 'energy conservation' refers to a reduction in energy use. While energy efficiency may lead to energy conservation, this is not necessarily the case.

14 Fourteen municipalities from North America and Europe participated in the *Urban $CO_2$ Reduction Project*: Ankara, Turkey; Bologna, Italy; Chula Vista, US; Copenhagen, Denmark; Dade County, US; Denver, US; Hannover, Germany; Helsinki, Finland; Minneapolis, US; Portland, US; Saarbrucken, Germany; Saint Paul, US; and City of Toronto and Metropolitan Toronto, Canada.

15 The number of local authorities who are members of the CCP programme is higher than that of the participants in ICLEI, as membership of ICLEI is not a prerequisite of the CCP programme.

16 These three projects were: 'Global Sustainability in an Urban Form: the impacts and implications of ICLEI's *Cities for Climate Protection* programme', conducted by Harriet Bulkeley in the UK and Australia 1999–2001 with support from the Nuffield Foundation and the Smuts Memorial Fund; 'Localizing Global Climate Change' conducted by Michele Betsill in the US during 1999–2000 as part of the Global Environmental Assessment Project, Belfer Centre for Science and International Affairs, Harvard University; and 'Valuing the Global Environment', doctoral research conducted in Australia by Harriet Bulkeley 1995–1998, with support from the University of Cambridge, the Smuts Memorial Fund and the Sir Robert Menzies Centre for Australian Studies, London.

## 5 Newcastle upon Tyne: planning and climate protection

1 The interviews quoted in the chapter were conducted by Harriet Bulkeley. Extracts are marked '*R*' to indicate a remark made by the respondent, and '*HB*' for the interviewer.

2 In 1987–1989 a regional study of energy use in the north-east of England was undertaken, with support from the European Commission and with the participation of many of the individuals and companies involved in the Newcastle study (NCC 1992: 13).

3 The Climate Resolution promulgated by Friends of the Earth UK in the early 1990s was a pledge made by local governments to reduce emissions of greenhouse gases by 30 per cent

below 1990 levels by 2005. In the early stages of ICLEI's CCP Europe campaign, one of the recruitment strategies was to contact UK local authorities who had already made this commitment and secure their involvement in the CCP programme.

4 The ALTENER programme provides funding for renewable energy initiatives, such as pilot projects or feasibility studies, while the SAVE programme is aimed at improving energy efficiency through similar initiatives (Haigh 1996).

5 Similar conclusions have been reached about other initiatives to foster local sustainable development, for example the Sustainable Communities Project in Huntingdonshire (Smith, J. H. *et al.* 1999).

6 The Green Paper on Planning, *Planning: Delivering a Fundamental Change* (DTLR 2001a), published by the Government in December 2001, proposes significant changes to this system. These include: abolishing the two-tier planning system of Structure and Local Plans in favour of Local Development Frameworks; speeding up the process of planning decisions, and in particular removing decisions about major infrastructure developments from local planning inquiries for consideration by Parliament; making planning frameworks more responsive, transparent and concise; and reviewing the role of planning obligations in the development control process. At this stage of the process, it is too early to tell what the eventual outcome on the current planning system, or on issues relating to climate protection and planning in particular, will be.

7 The 2001 Green Paper on planning proposes reform to the current system of planning obligations, as outlined in Box 5.2. It is suggested that the main purpose of planning obligations should be to contribute to sustainable development, and that standard levels of financial contribution for different types of development should be created, in order to make the process both faster and more transparent. It is also suggested that such contributions could be 'pooled', rather than being used to provide for, or lessen the impact of, specific developments (DTLR 2001c).

8 The final version of PPG3, which was not available at the time of this interview, does specifically mention energy efficiency as part of good design, though the accompanying best practice guide, *By Design*, does not (DETR 2000b, 2000d).

9 Similar problems were found in the 1980s and early 1990s (Owens 1986b, 1992), suggesting that, despite changes to government guidance, little progress has been made towards addressing them.

## 6 Cambridgeshire: climate protection and local transport policy

1 The analysis presented in this chapter benefited from discussions with Tim Rayner during the preparation of Bulkeley and Rayner (2003).

2 The strategy had the approval of the Environment and Heritage Services Committee but does not seem to have been formally adopted by the Council.

3 Although vehicle fuel efficiency has improved, energy use in the transport sector has increased through the use of auxiliary equipment in cars, the increased weight of vehicles complying with more stringent safety measures, the use of cars for short journeys (often from a cold start) when car engines do not function efficiently, the preferential use of cars over other modes of transport, and the increased number and length of trips taken (Banister 1998).

4 The interviews quoted in this chapter were conducted by Harriet Bulkeley. Quotations are marked '*R*' for respondent, and *'HB'* for interviewer.

5 It should be noted that to some degree this programme perpetuates the focus on road infrastructure, albeit through safety improvements in the form of traffic calming, cycle lanes and priority junctions. Although, as Marvin and Guy suggest (1999a: 145), this represents a considerable break with large-scale infrastructure projects designed to increase vehicle speed and efficiency, there is a continued faith in the ability of changes in infrastructure to bring about behavioural changes. The extent to which soft and persuasive measures are included to change behaviour – such as 'walking trains' or education campaigns – is not clear from policy documents.

## 7 Leicester: climate protection and the built environment

1 The campaign for the designation of Environment Cities in the UK was launched by the Civic

Trust, Friends of the Earth and the Wildlife Trusts to create four models of good practice on local sustainable development in the UK (Darlow and Newby 1997; Roberts 2000).

2 LIFE is a financial instrument created as a means of developing and implementing the European Commission's environmental policy, and is available to local authorities (Sharp, R. 1999: 56)

3 For a description of other transnational networks which address climate change, see Chapter 3.

4 Interviews quoted in this chapter were conducted by Harriet Bulkeley. In quotations, '*R*' is used to signify the respondent, and '*HB*' is used to signify the interviewer.

5 Increased standards for energy conservation within the Building Regulations have been resisted by private housebuilders, on the grounds that they would impose too high a cost on the construction of new houses, that new construction techniques would have to be adopted in order to comply with them, and that there is little, if any, demand for energy efficient housing among the public (Chapman, T. 1996: 311; Guy and Shove 2000: 108). Little is known about the impact of changes to building regulations in practice. For example, while the 1990 revisions to Building Regulations were intended to deliver a 20 per cent improvement in energy efficiency, research 'using information supplied by the housebuilders on the techniques they used to construct new houses, calculated that the 1990 Regulations would actually save only 6%' (Olivier 2001; see also Bhatti 1996: 163). Few other studies of this kind have been conducted, meaning that it is difficult to assess the potential of further adjustments to Building Regulations. Olivier (2001) argues that the current estimate of a 23 per cent improvement in energy efficiency as a result of the 2001 amendments (DTLR 2002) is more likely to be 10 per cent in practice.

6 Interview, Energy manager, Leicester City Council/Leicester Energy Agency, 2000.

## 8 Denver: climate protection, energy management and the transport sector

1 In cities like Denver and Milwaukee with a strong mayor–council form of government (see Chapter 4), voters elect a mayor as well as a city council. The mayor then oversees the day-to-day operation of city government and has considerable authority over personnel matters, while the city council serves a legislative function. In Chapters 8 and 9, 'the City' refers to the executive branch, which is governed by the mayor.

2 This section draws on semi-structured interviews with Denver, CCP and Environmental Protection Agency officials conducted by Michele Betsill in January/February 2000 and May 2002 as well as documents published by the City of Denver and ICLEI.

3 The *Clean Cities* programme is co-ordinated by the US Department of Energy. It is designed to promote the use of alternative-fuel vehicles in American cities through voluntary, public–private partnerships.

4 Reportedly, this reflects personal preference rather than concerns about the utility of the software.

## 9 Milwaukee: climate protection and new urbanism

1 The discussion in this section draws on semi-structured interviews with Milwaukee and CCP officials conducted by Michele Betsill in January/February 2000 as well as documents published by the City of Milwaukee and ICLEI.

2 In strong-mayor systems, department heads as well as a few other positions are appointed by the mayor, often as thanks for political support.

3 By reducing the amount of rubbish sent to landfill, the City reduces the quantities of methane, a greenhouse gas, produced in landfill sites and released into the atmosphere.

4 Not everyone agrees that sprawl is detrimental. In fact, some see suburbanization as a reflection of American preferences for how they wish to live. Conservative political pundit George Will views suburban development as individuals exercising their freedom to live where they want and contends that government efforts to limit growth will result in a loss of this freedom (Will 2000). Gordon and Richardson (2000: 115–117) agree that '"sprawl" is most people's preferred life-style', so that any attempt at growth management infringes on 'consumer sovereignty' and should be avoided.

5 The political movement associated with new urbanism is referred to as 'smart growth'.

**10 Newcastle, New South Wales: win–win solutions for climate protection?**

1 Greenhouse is the term used in Australia in policy and public discourse to describe anthropogenically induced climatic change. It is used here when referring to Australian policy documents and in quotes from interviews.
2 A recent report by the Independent Pricing and Regulatory Tribunal suggests that voluntary targets set by the electricity sector for reductions of greenhouse gas emissions will not be met. The NSW Premier, Bob Carr, has proposed that targets become mandatory, with a system of fines for non-compliance (Planet Ark 2002).
3 Environs Australia is an environmental network comprising local governments in Australia. Initially, Environs acted as ICLEI's representative in Australia, but in September 1999 ICLEI established an Australian office to deliver the CCP programme in collaboration with the AGO.
4 The AGO was created in 1998 as a dedicated branch of federal government dealing with climate change issues.
5 AMEIF is modelled in part on an initiative similar to that developed in Ontario, Canada, by ICLEI (NCC NSW 1999). It was established with funding from the NSW SEDA and acts as a consultancy and as a co-ordinating body for climate change policy and initiatives in Newcastle.

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