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## GLOBAL CITIES AND THE GOVERNANCE OF CLIMATE CHANGE: WHAT IS THE ROLE OF LAW IN CITIES?

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# GLOBAL CITIES AND THE GOVERNANCE OF CLIMATE CHANGE: WHAT IS THE ROLE OF LAW IN CITIES?

*Heike Schroeder and Harriet Bulkeley\**

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## INTRODUCTION

Cities are increasingly recognized as significant producers and able managers of carbon emission.<sup>1</sup> They have become the predominant source of anthropogenic carbon dioxide emissions—perhaps as much as 70% by some accounts<sup>2</sup>—and places where vulnerability to climate change may be acute. For the world's major cities, climate change is therefore becoming an issue of increasing political and environmental significance. But how cities go about addressing the issue of climate change is not yet well understood. The competency and capacity of local government to address a multi-layered environmental problem such as climate change is largely determined by the legal structures within which it is embedded, but also by factors such as critical individuals, past successes, business consensus, public opinion, market opportunities, and environmental advocacy.<sup>3</sup>

Climate change policy at national and international levels has developed significantly over the past two decades. In 1992, the United Nations Framework Convention on Climate Change was adopted at the Rio Summit with countries pledging to “prevent dangerous anthropogenic interference with the climate system” and to inventory and report on their greenhouse gas (“GHG”) emissions.<sup>4</sup> In 1997, the Kyoto Protocol established manda-

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1. HARRIET BULKELEY & MICHELE M. BETSILL, *CITIES AND CLIMATE CHANGE: URBAN SUSTAINABILITY AND GLOBAL ENVIRONMENTAL GOVERNANCE* 2 (2003) [hereinafter BULKELEY & BETSILL, *CITIES AND CLIMATE CHANGE*]; Michele M. Betsill & Harriet Bulkeley, *Looking Back and Thinking Ahead: A Decade of Cities and Climate Change Research*, 12 *LOC. ENV'T* 448 (2007) [hereinafter Betsill & Bulkeley, *Looking Back*].

2. NICHOLAS STERN, *THE ECONOMICS OF CLIMATE CHANGE: THE STERN REVIEW* 221 (2006). This is a commonly cited figure but it is argued that the level of city-based emissions will be much lower depending on which GHGs are included and whether emissions are counted at the stage of production or consumption. See David Satterthwaite, *Cities' Contribution to Global Warming: Notes on the Allocation of Greenhouse Gas*, 20 *ENV'T & URBANIZATION* 540 (2008).

3. See Harriet Bulkeley & Heike Schroeder, *Governing Climate Change Post-2012: The Role of Global Cities—London Case-Study* (Tyndall Ctr. for Climate Change Research, Working Paper No. 123, 2008) [hereinafter Bulkeley & Schroeder, *Governing Climate Change: London*], available at [http://www.tyndall.ac.uk/publications/working\\_papers/twp123.pdf](http://www.tyndall.ac.uk/publications/working_papers/twp123.pdf); Heike Schroeder & Harriet Bulkeley, *Governing Climate Change Post-2012: The Role of Global Cities—Los Angeles Case-Study* (Tyndall Ctr. for Climate Change Research, Working Paper No. 122, 2008) [hereinafter Schroeder & Bulkeley, *Governing Climate Change: Los Angeles*], available at [http://www.tyndall.ac.uk/publications/working\\_papers/twp122.pdf](http://www.tyndall.ac.uk/publications/working_papers/twp122.pdf).

4. Daniel Bodansky, *The United Nations Framework Convention on Climate Change: A Commentary*, 18 *YALE J. INT'L L.* 451, 455 (1993) (quoting United Nations Conference on Environment and Development: Framework Convention on Climate Change, May 9, 1992, in INTERGOVERNMENTAL NEGOTIATING COMM. FOR A FRAMEWORK CONVENTION ON CLIMATE CHANGE APR. 30-MAY 9, 1992, REPORT OF THE INTERGOVERNMENTAL NEGOTIATION COMMITTEE FOR A FRAMEWORK CONVENTION ON CLIMATE CHANGE ON THE WORK OF THE SECOND PART OF ITS FIFTH SESSION, U.N. Doc. A/AC237/18 (Oct. 16, 1992).

tory targets for industrialized countries to reduce emissions of greenhouse gases by 2008 through 2012, along with a range of economic instruments designed to assist with this goal.<sup>5</sup> Over the past decade, negotiations have continued as the economic instruments of the Kyoto Protocol, including the Clean Development Mechanism, Emissions Trading, and Joint Implementation, were finalized.<sup>6</sup> Although not all countries are on track to meet their targets under the Kyoto Protocol—and the United States remains outside of it—negotiations are now under way to develop a “post-2012” agreement.<sup>7</sup> To date, most analysis has focused on the role of nation-states in the design, promotion, and implementation of various “post-2012” policy architectures and instruments. A growing body of literature is pointing to the emergence of a range of non-nation state actors, such as multinational companies, carbon trading and offset organizations, and global cities, that have entered this policy arena and have developed their own initiatives and approaches to addressing this issue.<sup>8</sup>

This Article examines how global cities are governing climate change. Part I of this Article provides an overview of the national and international contexts of urban climate governance focusing on the United Kingdom and the United States. Parts II and III analyze London and Los Angeles, respectively, as examples of global cities. They provide a thorough examination of climate change policies and actions in these two cities, based on approximately thirty in-depth interviews with government, business and civil society representatives during 2007-08, as well as official documents and grey literature. Part IV then examines the modes of governance to understand what role law plays in urban efforts to mitigate climate change.

## I. URBAN CLIMATE GOVERNANCE

The development of an explicitly urban approach to climate change governance owes much to the emergence of transnational municipal networks

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5. HEIKE SCHROEDER, *NEGOTIATING THE KYOTO PROTOCOL: AN ANALYSIS OF NEGOTIATION DYNAMICS IN INTERNATIONAL NEGOTIATIONS* 90 (2001).

6. FARHANA YAMIN & JOANNA DEPLEDGE, *THE INTERNATIONAL CLIMATE CHANGE REGIME: A GUIDE TO RULES, INSTITUTIONS AND PROCEDURES* (2001).

7. Raymond Cléménçon, *The Bali Roadmap: A First Step on the Difficult Journey to a Post-Kyoto Protocol Agreement*, 17 *J. ENV'T & DEV.* 71 (2008).

8. Heather Lovell et al., *Carbon Offsetting: Sustaining Consumption?*, 41 *ENV'T & PLAN.* 90 (2009); Chukwumerije Okereke et al., *Conceptualizing Climate Governance beyond the International Regime*, 9 *GLOBAL ENVTL. POL.* 58 (2009); Chukwumerije Okereke, *An Exploration of Motivations, Drivers and Barriers to Carbon Management: The UK FTSE 100*, 25 *EUR. MGMT. J.* 475 (2007); Harriet Bulkeley & Heike Schroeder, *Beyond State/Non-State Divides: Global Cities and the Governing of Climate Change* (unpublished manuscript, on file with authors).

focused specifically on this issue in the early 1990s.<sup>9</sup> Since the early-2000s, these networks have evolved to become both more comprehensive and more politically significant, particularly with the development of the C40 network of global cities.<sup>10</sup> They have provided municipalities with inspiration, concrete projects, access to funding, examples of best practices, and informal structures of recognition and reward which have led to a significant response from municipalities worldwide.<sup>11</sup>

### A. International Context

In the late 1980s and early 1990s, a number of cities, primarily in North America and Europe, began to adopt targets and timetables for reducing their emissions of GHGs.<sup>12</sup> These efforts became organized internationally through the formation of three transnational municipal networks: Cities for Climate Protection (“CCP”),<sup>13</sup> Climate Alliance,<sup>14</sup> and Energie-Cités.<sup>15</sup> CCP was formed in 1992 as an initiative of the International Council for Local Environmental Initiatives (“ICLEI”). ICLEI first became involved with municipal climate policy through the Urban CO<sub>2</sub> Reduction Project,<sup>16</sup> which ran from 1991 to 1993 and was funded by the U.S. Environmental Protection Agency, the City of Toronto, and several private foundations.<sup>17</sup> Municipal membership of the CCP network initially reflected these origins with a concentration of members from North America and Europe, but has since expanded with specific campaigns in Australia, Canada, Europe, Latin America, Mexico, New Zealand, South Africa, South Asia, Southeast

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9. Michele Betsill & Harriet Bulkeley, *Transnational Networks and Global Environmental Governance: The Cities for Climate Protection Program*, 48 INT’L STUD. Q. 472 (2004).

10. See C40 Cities: An Introduction, <http://www.c40cities.org/> (last visited Jan. 22, 2009).

11. Betsill & Bulkeley, *Looking Back*, *supra* note 1, at 449.

12. BULKELEY & BETSILL, CITIES AND CLIMATE CHANGE, *supra* note 1; Hari M. Osofsky & Janet Koven Levit, *The Scale of Networks?: Local Climate Change Coalitions*, 8 CHI. J. INT’L L. 409 (2008) [hereinafter Osofsky & Levit, *Scale of Networks?*].

13. See ICLEI.org, Cities for Climate Protection (CCP), <http://www.iclei.org/index.php?id=800> (last visited Feb. 9, 2009).

14. See The Climate Alliance of European Cities, <http://www.climateforchange.net/23.html> (last visited Feb. 9, 2009).

15. See Energie-Cites.eu, <http://www.energie-cites.eu/> (last visited Jan. 22, 2009).

16. Fourteen municipalities from North America and Europe participated in the Urban CO<sub>2</sub> Reduction Project: Ankara, Turkey; Bologna, Italy; Chula Vista, U.S.; Copenhagen, Denmark; Dade County, U.S.; Denver, U.S.; Hanover, Germany; Helsinki, Finland; Minneapolis, U.S.; Portland, U.S.; Saarbrücken, Germany; Saint Paul, U.S.; and Toronto, Canada. Michelle Betsill, *Mitigating Climate Change in US Cities: Opportunities and Obstacles*, 6 LOC. ENV’T 393, 405 (2001).

17. BULKELEY & BETSILL, CITIES AND CLIMATE CHANGE, *supra* note 1, at 51.

Asia, and the United States.<sup>18</sup> CCP members pledge to reduce their emissions of greenhouse gases by between 10-20% from 1990 levels by 2010; member cities are now thought to account for 15% of world urban emissions.<sup>19</sup> The Climate Alliance has 1,100 members in seventeen European countries, with the aim to reduce emissions to 50% below 1990 levels by 2030. The network is based in Frankfurt am Main and most of its members are located in continental Europe (Germany, Austria and the Netherlands).<sup>20</sup> Energie-Cités stemmed from a project funded by the EU Commission and is a somewhat different network, with an explicit focus on local energy policy in which addressing climate change is only one factor. Founded in 1990 and based in France, it now has over 160 individual members in twenty-five European countries, with a concentration in francophone nations.<sup>21</sup>

During the 1990s and early 2000s, urban governance on climate change was primarily orchestrated through these three networks. In the mid-2000s, a new wave of transnational municipal networks emerged. The first of these was the 2005 United States Conference of Mayors Climate Protection Agreement,<sup>22</sup> in which cities pledged “to meet or beat the Kyoto Protocol targets in their own communities.”<sup>23</sup> ICLEI has since supported the development of the World Mayors Council on Climate Change with the explicit purpose “to politically promote climate protection policies at the local level.”<sup>24</sup> In the case of the global cities discussed this Article, the emergence of the C40 network has been a critical development.<sup>25</sup> This network was promoted by the Mayor of London and The Climate Group and formed by eighteen cities in 2005 as a parallel initiative to the Group of Eight (“G8”) Gleneagles summit on climate change.<sup>26</sup> In 2006, the C40 network

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18. See ICLEI.org, CCP Participants, <http://www.iclei.org/index.php?id=809> (last visited Jan. 22, 2009).

19. See ICLEI.org, How It Started?, <http://www.iclei.org/index.php?id=811> (last visited Feb. 9, 2009).

20. Kristine Kern & Harriet Bulkeley, *Cities, Europeanization and Multi-level Governance: Governing Climate Change Through Transnational Municipal Networks*, 47 J. COMMON MARKET STUD. 7, 7 n.5 (2009) [hereinafter Kern & Bulkeley, *Cities*].

21. *Id.* at 8.

22. See Seattle.gov., United States Mayors Climate Protection Agreement, <http://www.seattle.gov/mayor/climate/> (last visited Feb. 9, 2009).

23. *Id.*

24. See CCP Europe Campaign, <http://www.iclei-europe.org/?ccpeurope> (last visited Jan. 22, 2009); ICLEI.org, World Mayors Council on Climate Change, <http://www.iclei.org/index.php?id=7192> (last visited Jan. 22, 2009).

25. See C40 Cities: An Introduction, *supra* note 10.

26. See The Climate Group, World Cities Leadership Climate Change Summit, [http://www.theclimategroup.org/news\\_and\\_events/world\\_cities\\_leadership\\_climate\\_change\\_summit/](http://www.theclimategroup.org/news_and_events/world_cities_leadership_climate_change_summit/) (last visited Jan. 22, 2009).

entered into a partnership with the Clinton Climate Initiative and expanded its membership to include forty of the largest cities in the world and changed its name to the C40 Cities Climate Leadership Group.<sup>27</sup>

In December 2007, local government representatives met in Bali, Indonesia during COP-13 to convene a two-day conference during which they adopted a World Mayors and Local Governments Climate Protection Agreement.<sup>28</sup> The agreement is loosely modeled on the United States Conference of Mayors Climate Protection Agreement and sets forth six commitments that are more explicit than those upon which country delegates were able to agree in the international negotiations. The first commitment calls on local governments to “REDUCE greenhouse gas emissions immediately and significantly. Measure and report on annual reductions of greenhouse gas emissions and constantly work to increase reductions such that by 2050 greenhouse gas emissions will be reduced worldwide by 60% from 1990 levels and by 80% from 1990 levels in industrialized countries.”<sup>29</sup> ICLEI also sent a delegation larger than any single country and second only to the delegation representing trade interests under the International Emissions Trading Association.<sup>30</sup>

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27. See C40 Cities, History of the C40, <http://www.c40cities.org/about> (last visited Feb. 9, 2009).

28. See ICLEI.org, Local Government–Local Solutions, <http://www.iclei.org/index.php?id=7127> (last visited Jan. 22, 2009).

29. See World Mayors and Local Governments Climate Protection Agreement, <http://www.globalclimateagreement.org/> (last visited Jan. 22, 2009). The other five commitments are:

- IMPLEMENT subnational, national and international frameworks that are complementary and enable local governments by providing resources, authority and sufficient mandate to carry forward these roles and responsibilities.
- BUILD a sustainable energy economy through energy savings and the application of new and existing renewable and high efficiency technologies, to reduce dependence on fossil and nuclear fuels and aim for lowest-carbon options.
- EXECUTE climate change adaptation and preparedness measures through local government planning, development and operational mechanisms, prioritizing the most vulnerable cities.
- ADVOCATE that every national delegation participating in the UNFCCC negotiations include local government designated representation to ensure that local climate priorities and actions are included in future negotiations.
- PERSISTENTLY CALL for national governments to join the international community to undertake binding carbon limits to rapidly and significantly reduce greenhouse gas emissions in the short-term and by at least 60% worldwide below 1990 levels by 2050.

*Id.*

30. See United Nations Framework Convention on Climate Change, Conference of the Parties, 13th Sess., Bali, Indon., Dec. 3-14, 2007, *List of Participants*, U.N. Doc. FCCC/CP/2007/INF.1 (Dec. 14, 2007), available at <http://unfccc.int/resource/docs/2007/cop13/eng/inf01p02.pdf>. While there were 3516 registered participants from parties and

As this brief history suggests, there is a growing movement internationally for urban responses to climate change. These networks have provided municipalities with inspiration, concrete projects, access to funding, examples of best practices, and informal structures of recognition and reward which have led to a significant response from municipalities worldwide.<sup>31</sup> The extent to which municipal governments are able to address climate change, however, also depends on their competencies in this area, and it is to the role of local government in climate governance in the United Kingdom and the United States that we now turn.

### B. Local Government and Climate Governance in the United Kingdom

In the United Kingdom, the relationship between central government and local authorities is governed by the legal principle of *ultra vires*: “local councils have been able to do only what they are statutorily permitted to do. Their rights and competences are not general, but specific.”<sup>32</sup> “The statutory duties set by central government can be compulsory . . . dictating the activities local authorities must undertake, or discretionary, allowing for flexibility in the priority given to different measures and the ways in which they are implemented.”<sup>33</sup> Nonetheless, local government in the United Kingdom enjoys some financial independence. The mixture of specific competences and local discretion has led some commentators to argue that local government in the United Kingdom enjoys “partial autonomy.”<sup>34</sup>

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observer states there was a total of 4993 registered participants from non-governmental organizations. By comparison, at COP-12 the number of participants was 2352 and 2533, respectively, and at COP-8 in 2002 the number of participants was 1468 and 1858, respectively. See United Nations Framework Convention on Climate Change, Conference of the Parties, 12th Sess., Nairobi, Kenya, Nov. 6-17, 2006, *List of Participants*, U.N. Doc. FCCC/CP/2006/INF.1 (Nov. 16, 2006), available at <http://unfccc.int/resource/docs/2006/cop12/eng/inf01.pdf>; United Nations Framework Convention on Climate Change, Conference of the Parties, 8th Sess., New Delhi, India, Oct. 23–Nov. 1, 2002, *List of Participants*, U.N. Doc. FCCC/CP/2002/INF.2 (Nov. 1, 2002), available at <http://unfccc.int/resource/docs/cop8/inf02.pdf>; see also Heather Lovell, *More Effective, Efficient and Faster? The Role of Non-State Actors at UN Climate Negotiations* (Tyndall Ctr. for Climate Change Research, Tyndall Briefing Note No. 24, 2007).

31. See Betsill & Bulkeley, *Looking Back*, *supra* note 1. For example, ICLEI Australia suggests that between 1997-98 and 2007-08, Australian councils have reduced CO<sub>2</sub> emissions by over 18 million tons. See ICLEI.org, CCP Australia; Greenhouse Savings, <http://www.iclei.org/index.php?id=2291> (last visited Jan. 30, 2008) (scroll down to greenhouse savings heading).

32. DAVID WILSON & CHRIS GAME, LOCAL GOVERNMENT IN THE UNITED KINGDOM 27 (2002).

33. BULKELEY & BETSILL, CITIES AND CLIMATE CHANGE, *supra* note 1, at 59.

34. WILSON & GAME, *supra* note 32, at 28-29; see also Kern & Bulkeley, *Cities*, *supra* note 20.



While the Greater London Authority (“GLA”), the level of government responsible for metropolitan climate policy, is not constituted as a local authority but rather as a devolved administration, the competencies and powers are similar to those of local authorities in the climate change area.<sup>35</sup>

During the 1990s and early 2000s, this partial autonomy was evident in relation to urban climate change policy. Despite the lack of any explicit statutory duties to address climate change, local authorities in the United Kingdom had various duties that related to climate protection. Following the 1995 Home Energy Conservation Act, local authorities had a duty to report on the energy efficiency standards of their housing stock and the ability to take measures to improve it.<sup>36</sup> The introduction of Best Value Performance Indicators in the late 1990s included an indicator for energy use in council buildings, as well as statutory targets for increasing the recycling and composting of waste.<sup>37</sup> National guidance on Local Transport Plans and in the form of Planning Policy Statements also provided scope for addressing emissions of greenhouse gases through improving the energy efficiency of new developments, reducing the need to travel and encouraging the development of renewable energy.<sup>38</sup> In addition, through the Transport Act 2000, local authorities were given the powers to implement congestion and workplace charging schemes.<sup>39</sup> Exercise of this power has been very limited, with congestion charging confined to London and a small scheme in Durham, in the north-east of England. At the same time as fulfilling these duties, there is a high level of discretion for local authorities in interpreting government guidance and the new duty of “well being,” in-

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35. See generally Joseph F. Zimmerman, *The Greater London Authority: Devolution or Administrative Decentralization?*, Address at Annual Meeting of the American Political Science Association (Aug. 28, 2003).

36. Emma Jones & Matthew Leach, *Devolving Residential Energy Efficiency Responsibility to Local Government: The Case of HECA*, 5 *LOC. ENV'T* 69, 72 (2000).

37. See OFFICE OF THE DEPUTY PRIME MINISTER, *BEST VALUE PERFORMANCE INDICATORS: 2005/06*, at 9 (2004), available at <http://www.communities.gov.uk/publications/localgovernment/bestvalueperformance> (follow “Best Value Performance Indicators 2005/06: Guidance Document” hyperlink).

38. Harriet Bulkeley, *Planning and the Governance of Climate Change*, in *PLANNING FOR CLIMATE CHANGE: STRATEGIES FOR MITIGATION AND ADAPTATION FOR SPATIAL PLANNERS* (S. Davoudi & J. Crawford eds.) (forthcoming 2009); Harriet Bulkeley & Michele M. Betsill, *Rethinking Sustainable Cities: Multilevel Governance and the “Urban” Politics of Climate Change*, 14 *ENV’L POL.* 42 (2005) [hereinafter Bulkeley & Betsill, *Rethinking Sustainable Cities*]; D. McEvoy et al., *Reducing Residential Carbon Intensity: The New Role for English Local Authorities*, 38 *URB. STUD.* 7 (2001).

39. See LOCAL GOV’T ASS’N, *CUTTING THROUGH THE GREEN TAPE: THE POWERS COUNCILS HAVE TO TACKLE CLIMATE CHANGE 24* (2008) [hereinafter LGA, *CUTTING THROUGH THE GREEN TAPE*], available at <http://www.lga.gov.uk/lga/publications/publication-display.do?id=874295>.

roduced in the Local Government Act 2000, allows local governments to pursue any activities which they consider will promote the economic, social, or environmental well-being of their areas, both of which provide municipal government with considerable scope to implement climate policy.

In the absence of central government direction, however, specific climate protection strategies per se have historically been rare. Some local authorities, including Cambridgeshire, Kirklees, Leicester, Newcastle, and Southampton, developed energy or climate change strategies in the early 1990s.<sup>40</sup> It was following the CCP-UK pilot,<sup>41</sup> and the subsequent development of the Nottingham Declaration in 2000<sup>42</sup>, however, that local authorities in the United Kingdom began to develop systematic climate change action plans. Since 2000, over 300 local authorities have signed the Nottingham Declaration,<sup>43</sup> and municipal interest and innovation in urban climate change governance has increased. This has, in part, resulted from increasing direction from national government to local authorities in the arena of climate policy, as well as a growing interest among a number of national climate change related agencies (for example, the Energy Savings Trust and the Carbon Trust) in the role of local government.<sup>44</sup> This has been most notable in the area of land-use planning. Planning Policy Statement 1 (“PPS1”), published in 2005, provides the framework for spatial planning in the United Kingdom and specifically states that:

Regional planning bodies and local planning authorities should *ensure* that development plans contribute to global sustainability by addressing

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40. Harriet Bulkeley & Kristine Kern, *Local Government and Climate Change Governance in the UK and Germany*, 43 URB. STUD. 2237, 2239 (2006) [hereinafter Bulkeley & Kern, *Local Government*]; see generally BULKELEY & BETSILL, CITIES AND CLIMATE CHANGE, *supra* note 1, at 70-121; Lee Allman et al., *The Progress of English and Welsh Local Authorities in Addressing Climate Change*, 9 LOC. ENV'T 271 (2004).

41. The CCP-UK initiative was a U.K. pilot of the ICLEI's Cities for Climate Protection program, and was organized by the Improvement and Development Agency (“IDeA”) in conjunction with ICLEI Europe, and funded by IDeA and the Department for Environment, Transport, and the Regions (“DEFRA”). The pilot involved twenty-four local authorities over a period of almost two years. A “roll out” of the pilot, a scheme to involve more local authorities in reducing their own in-house emissions of greenhouse gases by 5%, is being developed by the Carbon Trust in consultation with ICLEI. Bulkeley & Kern, *Local Government*, *supra* note 40, at 2255.

42. See The Nottingham Declaration, [http://www.iclei-europe.org/fileadmin/user\\_upload/ITC/nottingham2005/Nottingham\\_Declaration\\_current.pdf](http://www.iclei-europe.org/fileadmin/user_upload/ITC/nottingham2005/Nottingham_Declaration_current.pdf) (last visited Jan. 30, 2009) (committing signatories to addressing the causes and consequences of climate change).

43. See The Nottingham Declaration on Climate Change, Who Has Signed?, <http://www.energysavingtrust.org.uk/nottingham/Nottingham-Declaration/Why-Sign/Who-has-signed> (last visited Jan. 22, 2009).

44. See, e.g., The Nottingham Declaration Partners, <http://www.energysavingtrust.org.uk/nottingham/Nottingham-Declaration/Why-Sign/The-Nottingham-Declaration-Partners> (last visited Jan. 22, 2009).

the causes and potential impacts of climate change—through policies which reduce energy use, reduce emissions (for example, by encouraging patterns of development which reduce the need to travel by private car, or reduce the impact of moving freight), promote the development of renewable energy resources, and take climate change impacts into account in the location and design of development.<sup>45</sup>

Previous planning guidance suggested that the potential for regions to mitigate climate change and their vulnerability to impacts should be “considered,”<sup>46</sup> or that planners should “promote the energy efficiency of new housing where possible.”<sup>47</sup> However, the language of PPS1 is clearer: planning bodies and authorities need to ensure that both the causes and impacts of climate change are addressed.<sup>48</sup> Local authorities have also been proactive in this area. In 2004, following the publication of national planning guidance on renewable energy, the London Borough of Merton introduced a target for all major new developments (those comprising over ten dwellings or 1000m<sup>2</sup> of non-residential development) of providing 10% of energy use through on-site renewable energy generation to reduce their emissions of carbon dioxide. The “Merton Rule” has now been adopted, in some form, by thirty-four local governments in the United Kingdom with a further sixty-three “actively progressing” its use.<sup>49</sup> In 2007, a supplementary planning policy statement, Planning and Climate Change has been published.<sup>50</sup> Here, the role of spatial planning in addressing climate change is seen to be five-fold:

secure enduring progress against the United Kingdom’s emissions targets  
 . . . deliver the Government’s ambition of zero carbon development . . .  
 shape sustainable communities that are resilient to and appropriate for the  
 climate change now accepted as inevitable . . . create an attractive envi-  
 ronment for innovation and for the private sector to bring forward invest-

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45. OFFICE OF THE DEPUTY PRIME MINISTER, PLANNING POLICY STATEMENT 1: DELIVERING SUSTAINABLE DEVELOPMENT 6 (2005), available at <http://www.communities.gov.uk/planningandbuilding/planning/planningpolicyguidance/planningpolicystatements/planningpolicystatements/pps1/> (emphasis added).

46. OFFICE OF THE DEPUTY PRIME MINISTER, THE PLANNING RESPONSE TO CLIMATE CHANGE: ADVICE ON BETTER PRACTICE 24, 25, 62 (2004), available at [www.communities.gov.uk/documents/planningandbuilding/pdf/147597.pdf](http://www.communities.gov.uk/documents/planningandbuilding/pdf/147597.pdf).

47. DEP’T FOR ENV’T, TRANSP. & THE REGIONS, PLANNING POLICY GUIDANCE 3: HOUSING, HMSO, LONDON 3 (2000).

48. Harriet Bulkeley, *A Changing Climate for Spatial Planning?* (unpublished manuscript, on file with author).

49. See [Themertonrule.org](http://www.themertonrule.org), List of Boroughs, <http://www.themertonrule.org/list-of-boroughs> (last visited Jan. 30, 2009).

50. DEP’T FOR COMMUNITIES & LOCAL GOV’T, PLANNING POLICY STATEMENT: PLANNING AND CLIMATE CHANGE, SUPPLEMENT TO PLANNING POLICY STATEMENT 1 (2007).

ment . . . capture local enthusiasm and give local communities a real opportunity to influence, and take, action on climate change.<sup>51</sup>

Interestingly, this guidance points not only to the regulatory role of planning, but also to its potential in engaging and enabling others—notably the private sector and “communities.” This discourse reflects what some commentators have termed a transition from “a unitary to a multiple system for governing local communities—from local government to local governance.”<sup>52</sup> During the 1990s, “local authorities became less extensively involved in the direct provision of education, housing, public transport, social and other services. Instead, they increasingly ‘enabled’ other agencies, the voluntary sector and the private sector to provide these services.”<sup>53</sup> This approach to local government is also reflected in the development of Local Strategic Partnerships (“LSPs”), sustainable community strategies, and Local Area Agreements (“LAAs”) as the vehicles through which local policy and action are mandated.<sup>54</sup> Through successive Local Government Acts during the 2000s, the Labour Administration has brought forward a system in which LSPs, consisting of local government and other stakeholders, develop both a sustainable community strategy and a set of up to thirty-five priorities and targets from a set of 198 indicators as a focus for local action, which are formalized in an agreement with national government known as an LAA. Of the 198 indicators, five relate to addressing climate change:<sup>55</sup>

185: CO<sub>2</sub> reduction from local authority operations

186: per capita reductions of CO<sub>2</sub> emissions in the local authority area

187: tackling fuel poverty - % of people receiving income based benefits living in homes with a low energy efficiency rating

188: planning to adapt to climate change

189: flood and coastal erosion risk management<sup>56</sup>

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51. *Id.* at 9.

52. C. Skelcher, *Governing Communities: Parish-Pump Politics or Strategic Partnerships?*, 29 *LOC. GOV'T STUD.* 9 (2003).

53. ROBERT LEACH & JANIE PERCY-SMITH, *LOCAL GOVERNANCE IN BRITAIN* 29 (2001).

54. LOCAL GOV'T ASS'N, *LOCAL AREA AGREEMENTS—COMMUNICATING LOCAL PRIORITIES, COMMUNICATIONS TOOLKIT 2008* [hereinafter *LGA, LOCAL AREA AGREEMENTS*], <http://www.lga.gov.uk/lga/aio/791870>.

55. DEP'T FOR COMMUNITIES & LOCAL GOV'T, *NATIONAL INDICATORS FOR LOCAL AUTHORITIES AND LOCAL AUTHORITY PARTNERSHIPS: HANDBOOK OF DEFINITIONS 13-15* (2008), available at <http://www.communities.gov.uk/publications/localgovernment/finalnationalindicators>.

56. *Id.*

Significantly, in a survey of the most frequently selected priorities for the first round of LAA (2008-2011), the Local Government Association found that reducing CO<sub>2</sub> emissions was the fifth most selected performance indicator (selected in 100 out of the total 150 LAA), ranking above issues such as reducing childhood obesity, crime, educational attainment, and cultural cohesion.<sup>57</sup> While this is a significant indicator of the current importance attached to local government responses to climate change, it remains to be seen how authorities will fare in actually seeking to achieve this goal in the short and long term.

The overall picture of competencies for addressing climate change among United Kingdom local authorities is a complex one. On the one hand, central government has become increasingly involved in “directing” local government in this area, particularly through new planning guidance and national performance indicators. On the other hand, these remain areas for local government discretion—there is no statutory responsibility to follow this guidance—and there is also considerable scope for local government to act on climate change through other means, including through their own estate, in arenas of housing and transport policy, and through the increasingly regulated area of biodegradable waste.<sup>58</sup> Partial autonomy remains a valid description of the competencies of local government in this area, albeit that the increasing political and public salience of the issue has led to a greater level of involvement by United Kingdom local authorities than was the case in the late 1990s. At the same time, it is clear that the general trend towards a system of “local governance” rather than “government” is visible in the urban climate policy arena. There is emphasis on the role of partnerships and community involvement as critical in the development and delivery of local climate policy. At the same time, more traditional mechanisms of governing “including hierarchical relations between the central and local state, service delivery and means of regulation remain important.”<sup>59</sup> While this context provides considerable scope for urban climate governance, it also creates a situation of uncertainty. The wording on a recent document produced by the Local Government Association to set out the many possibilities for action on climate change is interesting in this regard. It warns that: *Not all powers are listed, and in some cases the powers discussed will only be applicable to certain tiers of government. It*

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57. LGA, LOCAL AREA AGREEMENTS, *supra* note 54, at 11.

58. Harriet Bulkeley et al., *Modes of Governing Municipal Waste*, 39 ENV'T & PLAN. 2733 (2007).

59. Bulkeley & Kern, *Local Government*, *supra* note 40, at 2241.

*is good practice to check any legal implications have been cleared by your legal services.*<sup>60</sup>

In the context of partial autonomy, legal uncertainties remain as to the role and responsibilities of local governments in the United Kingdom addressing climate change. In the case of London, the Greater London Authority (“GLA”) has been charged with a “duty” to address climate change, which we set out in further detail below. The GLA, as a devolved administration encompassing a regional development agency, however, also has an ambiguous, partially autonomous role in addressing climate change. Through its planning and strategic policy powers, the GLA is charged with following national direction—as set out above—but also has considerable independence. We review this situation in depth in Part II. Before detailing the case-study, we examine the foundations for municipal climate governance in the United States.

### C. Local Government and Climate Governance in the United States

Local government has no status in the U.S. Constitution, which leaves it mainly to the state government to determine the state-local power relationship.<sup>61</sup> The doctrine that established state preeminence over local governments is “Dillon’s rule,” which takes its name from a ruling in 1868 on municipal corporations.<sup>62</sup> As interpreted by the Supreme Court in 1903, the doctrine pronounces that local governments are “mere political subdivisions of the state for the purpose of exercising a part of its powers.”<sup>63</sup> Power has to be expressly granted to them.<sup>64</sup> This has happened through states amending their constitutions to grant their larger cities “home rule”, which is a guarantee of non-interference in certain areas of local affairs. These powers and responsibilities can be withdrawn or altered by the states at any time.<sup>65</sup> Local governments are therefore “mere conveniences of the

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60. LGA, CUTTING THROUGH THE GREEN TAPE, *supra* note 39, at 5.

61. JOSEPH F. ZIMMERMAN, STATE-LOCAL RELATIONS: A PARTNERSHIP APPROACH (2d ed. 1995).

62. See J. FRED SILVA & ELISA BARBOUR, PUBLIC POLICY INSTITUTE OF CALIFORNIA, THE STATE-LOCAL FISCAL RELATIONSHIP IN CALIFORNIA: A CHANGING BALANCE OF POWER (1999); John G. Grumm & Russell D. Murphy, *Dillon’s Rule Reconsidered*, 416 ANNALS AM. ACAD. POL. & SOC. SCI. 120 (1974).

63. *Atkin v. Kansas*, 191 U.S. 207, 220 (1903).

64. SILVA & BARBOUR, *supra* note 62, at 3.

65. Lawrence Pratchett, *Local Autonomy, Local Democracy and the “New Localism”*, 52 POL. STUD. 358, 362 (2004).

states”, and are, above all, administratively important in that they implement the laws of the state.<sup>66</sup>

The power of states is significant in the U.S. political system as it is based on the principle of federalism, which shares power between national and state levels of government.<sup>67</sup> This “dual federalism” is historically rooted in the fact that at the time of state formation, a number of states had already existed as virtually autonomous units under the Articles of the Confederation.<sup>68</sup> During the first 150 or so years after the Constitution was ratified, the states remained more important than the national government in that most policies governing U.S. citizens were made by state legislatures, not Congress.<sup>69</sup> The tide turned somewhat when the economic powers of state governments were substantially cut in 1937 after the Supreme Court emphasized the national government’s role in interstate commerce at the expense of intrastate commerce which had been the responsibility of the states.<sup>70</sup> It thus enabled the national government to substantially regulate local economic affairs. The Supreme Court also ruled that whenever a state law conflicts with a federal law, the state law becomes invalid.<sup>71</sup> But even though national government powers to regulate the economy expanded after 1933, the national government did not expand at the expense of the states.<sup>72</sup>

States control how local governments can raise revenue, which is an important determinant of what local governments can do regarding climate change. Cities generally raise revenue through property taxes, but they can also issue sales taxes.<sup>73</sup> In California, the level of local government’s fiscal autonomy has changed over time. Through passage in 1910 of a state ballot measure known as the Separation of Sources Act, local government was granted exclusive control over property taxes, which was the main source of public revenue at that time. This doctrine was substantially revoked by the passage of Proposition 13 in 1978 in California.<sup>74</sup> It sets a uniform

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66. THEODORE J. LOWI & BENJAMIN GINSBERG, *AMERICAN GOVERNMENT: FREEDOM AND POWER* 49 (5th ed. 1998).

67. *See generally* JOSEPH F. ZIMMERMAN, *CONTEMPORARY AMERICAN FEDERALISM: THE GROWTH OF NATIONAL POWER* (1992).

68. LOWI & GINSBERG, *supra* note 66, at 42-43.

69. *Id.*

70. *See* *Ingels v. Morf*, 300 U.S. 290 (1937); Leslie Zines, *Federal Constitutional Power Over the Economy*, *PUBLIUS*, Autumn, 1990, at 19.

71. LOWI & GINSBERG, *supra* note 66, at 45-48.

72. *Id.*

73. J. RICHARD ARONSON & JOHN L. HILLEY, *BROOKINGS INST., FINANCING STATE AND LOCAL GOVERNMENTS* (4th ed. 1986).

74. ELISA BARBOUR, *PUB. POL’Y INST. OF CAL., STATE-LOCAL FISCAL CONFLICTS IN CALIFORNIA: FROM PROPOSITION 13 TO PROPOSITION 1A* (2007).

statewide property tax of a maximum of 1% on the home value at the time of purchase. While significantly reducing the financial burden of, especially old, Californian homeowners, Proposition 13 transferred control over property tax allocation from local to state government and stripped local government of a significant share of its income.<sup>75</sup>

Not only do states control local government finances, the national government also controls those of the state and local governments. Congress provides funds to state and local governments through “grants-in-aid” (later called “block grants”) on the condition that they will be spent on a particular cause specified by Congress.<sup>76</sup> For example, Congress sets national goals such as public housing and assistance to the unemployed and provides grants-in-aid to meet these goals.<sup>77</sup> The grants-in-aid scheme is a way of strategically encouraging state and local governments to pursue nationally defined goals, without commanding and controlling them or prescribing their approach to meeting these goals. More recently, this scheme has transformed somewhat to what has been called “regulated federalism,” where national government may threaten to withhold grant money unless state and local governments conform to national standards, such as on environmental law.<sup>78</sup> National government provides grants-in-aid financing but sets conditions which its beneficiaries must meet in order to keep the grants. In some cases, it also sets national standards in areas without providing funding to meet them.<sup>79</sup>

Interaction between these levels of government is not always as top-down as the above may suggest. States and cities have taken on the issue of climate change, filling a policy void at the national level especially after the Bush Administration’s withdrawal from the Kyoto process in 2001 and ongoing lack of any significant policy response.<sup>80</sup> Several states, including California, have subsequently pledged to implement the United States

75. SILVA & BARBOUR, *supra* note 62.

76. ARONSON & HILLEY, *supra* note 73, at 3.

77. LOWI & GINSBERG, *supra* note 66, at 49-59.

78. *Id.* at 51-53.

79. *Id.* at 49-59.

80. The federal government has, to date, created an 18% reduction of GHG intensity by 2012, which is assessed to be close to a business-as-usual scenario. See Guri Bang et al., *Future United States Climate Policy: International Re-engagement?*, 6 INT’L STUD. PERSP., 285, 291 (2005); see also Kathryn Harrison, *The Road not Taken: Climate Change Policy in Canada and the United States*, 7 GLOBAL ENVTL. POL. 92 (2007). It is likely that cap and trade proposals will continue to be submitted to Congress in the coming years. See Pew Center on Global Climate Change, <http://www.pewclimate.org/> (last visited Jan. 22, 2009). President Obama has announced that his administration will reengage with the UNFCCC. See Barackobama.com, [http://my.barackobama.com/page/content/newenergy\\_more#emissions](http://my.barackobama.com/page/content/newenergy_more#emissions) (last visited Jan. 22, 2009).



commitments under the Kyoto Protocol at the state level and have introduced a variety of policy measures.<sup>81</sup> They have adopted measures which have impacted both the national and the local level. For example, the 2001 California Climate Action Registry was the first of its kind to be established, and has led to the creation of the Climate Registry which, as of January 2008, serves large parts of North America in supporting voluntary, market-based and regulatory GHG emissions reporting schemes.<sup>82</sup>

In April 2007, the United States Supreme Court issued a final decision in *Massachusetts v. EPA*<sup>83</sup> holding that GHGs are considered air pollutants under the Clean Air Act (“CAA”). The decision, however, does not force the United States Environmental Protection Agency (“EPA”) to regulate them, but it does limit the justifications the EPA may give for not doing so.<sup>84</sup>

The federal government, through the EPA, holds the authority over the regulation of emissions from new vehicles and preempts states from adopting or enforcing standards, to avoid a lack of national uniformity. Under the CAA regulations, however, California is the only authorized state to regulate vehicle emissions, while the rest of the states are free to adopt either California’s or the federal standards. California is the first state to enact a mandatory reduction of GHG emissions from vehicles through Assembly Bill 1493 (“AB1493”) and so far fifteen other states have adopted California’s AB1493 standards. Unfortunately, AB1493 standards have not been implemented because federal regulatory requirements stand in the way. In January 2008, California filed a lawsuit to reverse the EPA’s waiver denial of 2007, which concluded that state standards were intended to address local or regional pollution problems, not to address climate change emissions, because climate change is defined as a global issue and therefore does not pose compelling and extraordinary effects on California compared to the rest of the country.<sup>85</sup>

California is regarded to have developed the most ambitious and comprehensive effort to mitigate climate change in the United States.<sup>86</sup> In addi-

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81. Pew Center on Global Climate Change, <http://www.pewclimate.org/states-regions> (last visited Jan. 22, 2009).

82. See The Climate Registry, <http://www.theclimateresistry.org> (last visited Jan. 22, 2009).

83. *Massachusetts v. EPA*, 549 U.S. 497 (2007).

84. See generally ROBERT MELTZ, CONG. RESEARCH SERV., THE SUPREME COURT’S CLIMATE CHANGE DECISION: *MASSACHUSETTS V. EPA* (2007).

85. See California State Motor Vehicle Pollution Control Standards, 73 Fed. Reg. 12156 (2008).

86. See, e.g., Michael Hanemann, *California’s New Greenhouse Gas Laws*, 2 REV. ENVTL. ECON. & POL’Y 114–29 (2008) (discussing California’s climate change initiatives).

tion to existing building and appliance codes,<sup>87</sup> California has recently passed several important pieces of legislation. In 2006, it passed the California Global Warming Solutions Act,<sup>88</sup> which, through an economy-wide regulatory program, mandates reductions in GHG emissions to 1990 levels by 2020 (equalling a 25-30% reduction from current emission levels<sup>89</sup>). The act includes a package of policies to be put in place by state agencies. Governor Schwarzenegger's Executive Order S-3-05<sup>90</sup> of 2005 establishes a reduction of GHG emissions to 2000 levels by 2010, a reduction to 1990 levels by 2020 and a reduction to 80% below 1990 levels by 2050.

AB 1493, passed in 2002, has made California the first state to regulate carbon dioxide emissions from motor vehicles.<sup>91</sup> It mandates that the California Air Resources Board ("CARB") develop and implement emission caps for vehicles beginning in model year 2009.<sup>92</sup> California enacted passed legislation<sup>93</sup> that requires that 20% of the electricity sold by investor-owned electric utilities in the state come from renewable sources by 2010.<sup>94</sup> It is currently under consideration to be strengthened further—possibly to 33% by 2020.<sup>95</sup> Senate Bill 1368 of 2006, the Greenhouse Gas Emissions Performance Standard, requires the California Energy Commission ("CEC") and the California Public Utilities Commission ("CPUC") to set a GHG emissions standard for electricity used in California, regardless of whether it is generated in state or purchased from plants out of state.<sup>96</sup> All of these measures have had significant impacts between levels of California's government as well as across states.

Similarly to California, other U.S. cities have adopted innovative measures to address climate change, both in climate-active and climate-inactive

87. See California's Energy Efficiency Standards for Residential and Non Residential Buildings, <http://www.energy.ca.gov/title24/> (last visited Jan. 22, 2009).

88. Assem. B. 32, 2006 Assem., Reg. Sess. (Cal. 2006), available at <http://www.arb.ca.gov/cc/docs/ab32text.pdf>.

89. Schroeder & Bulkeley, *Governing Climate Change: Los Angeles*, *supra* note 3, at 4.

90. Exec. Order No. S-3-05 (June 1, 2005), available at <http://gov.ca.gov/executive-order/1861/> (last visited Jan. 22, 2009) (documenting environmental executive order given by the Governor of California).

91. Assem. B. 1493, 2002 Assem., Reg. Sess. (Cal. 2002), available at [http://www.climatechange.ca.gov/publications/legislation/ab\\_1493\\_bill\\_20020722\\_chaptered.pdf](http://www.climatechange.ca.gov/publications/legislation/ab_1493_bill_20020722_chaptered.pdf).

92. *Id.* § 3.

93. See S.B. 107, 2006 Leg., Reg. Sess. (Cal. 2006).

94. *Id.* § 2. The target year was initially 2017 and accelerated by the California Public Utilities Commission. CAL. PUB. UTILS. COMM'N, ENERGY ACTION PLAN II: IMPLEMENTATION ROADMAP FOR ENERGY POLICIES 6 (2005) [hereinafter CPUC: IMPLEMENTATION], available at <http://docs.cpuc.ca.gov/published/REPORT/51604.htm>.

95. *Id.*

96. See S.B. 1368, 2006 Leg., Reg. Sess. (Cal. 2006), available at [http://www.leginfo.ca.gov/pub/05-06/bill/sen/sb\\_1351-1400/sb\\_1368\\_bill\\_20060929\\_chaptered.pdf](http://www.leginfo.ca.gov/pub/05-06/bill/sen/sb_1351-1400/sb_1368_bill_20060929_chaptered.pdf).

states.<sup>97</sup> A noteworthy development has been the 2005 United States Conference of Mayors Climate Protection Agreement,<sup>98</sup> which commits its currently over 700 signatories to take the following three actions:

- Strive to meet or beat the Kyoto Protocol targets in their own communities, through actions ranging from anti-sprawl land-use policies to urban forest restoration projects to public information campaigns;
- Urge their state governments, and the federal government, to enact policies and programs to meet or beat the greenhouse gas emission reduction target suggested for the United States in the Kyoto Protocol—7% reduction from 1990 levels by 2012; and
- Urge the U.S. Congress to pass the bipartisan greenhouse gas reduction legislation, which would establish a national emission trading system.<sup>99</sup>

Cities are not equal in terms of power structures. There are three general forms of city government in the United States: the mayor-council, commission, and council-manager systems.<sup>100</sup> 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.<sup>101</sup> Budgetary and personnel decisions may be taken by either the mayor (“strong-mayor” system) or by the council (“weak-mayor” system).<sup>102</sup> Los Angeles is an example of a “strong-mayor” system.<sup>103</sup> In the commission form of city government,

[e]ach commissioner serves as the administrative head of a city department and collectively they are responsible for making policy decisions. [Finally,] [i]n the council-manager system, a city council is elected in at-large elections. The council then hires a city manager, who oversees the day-to-day administration of the city government. In most cases, the council chooses from among its ranks someone to serve as mayor but without the [extent of mayoral] powers under the mayor-council form of government.<sup>104</sup>

97. Osofsky & Levit, *Scale of Networks?*, *supra* note 12, at 413.

98. See MAYORS CLIMATE PROT. CTR., U.S. CONFERENCE OF MAYORS CLIMATE PROTECTION AGREEMENT (2005), available at <http://www.usmayors.org/climateprotection/agreement.htm>.

99. *Id.*

100. FORMS OF LOCAL GOVERNMENT, A HANDBOOK ON CITY, COUNTY AND REGIONAL OPTIONS 6 (Roger L. Kemp ed., 1999).

101. *See id.*

102. BULKELEY & BETSILL, CITIES AND CLIMATE CHANGE, *supra* note 1, at 64.

103. See TERRY CHRISTENSEN & TOM HOGEN-ESCH, LOCAL POLITICS: A PRACTICAL GUIDE TO GOVERNING AT THE GRASSROOTS 123 (M.E. Sharpe ed., 2d ed. 2006).

104. BULKELEY & BETSILL, CITIES AND CLIMATE CHANGE, *supra* note 1, at 64-65.

Metropolitan areas, such as the Los Angeles metropolitan area, are an important context in which city and county governments exist in the United States. They are not a formal political designation but rather a reflection of urban sprawl or the “suburbanization” of America.<sup>105</sup> This mismatch of political and urban delimitation has led to a fragmentation of authority, making it difficult to manage problems such as traffic congestion or air and water pollution.<sup>106</sup> Inner-cities are often faced with financial difficulties as people move to the suburbs, depriving the city government of its income from property taxes, while continuing to use the city’s basic services and infrastructures.<sup>107</sup>

## II. CLIMATE POLICY AND ACTION IN LONDON

This Part reviews the development of London’s climate change policy during the period from 2000 through 2008.

### A. London’s Socio-Economic and Environmental Profile

London is the capital of the United Kingdom with a population of 7.7 million, projected to reach 8.1 million by 2016.<sup>108</sup> London’s economy contributes 20% to U.K. GDP, with over a third of the workforce employed in the financial and business services sector.<sup>109</sup> While it has witnessed strong economic growth, there are still areas of significant social and economic deprivation, with five of the ten most deprived local authorities situated in inner London.<sup>110</sup> London’s emissions of greenhouse gases are substantial and similar to those of some European countries such as Greece or Portugal.<sup>111</sup> In 2006, excluding aviation, carbon dioxide emissions were 44Mt or 8 % of the United Kingdom’s total.<sup>112</sup> As shown in Figure 1, the predominant sources of London’s emissions of carbon dioxide are the domestic and commercial and public sectors.

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105. *Id.*; CHRISTENSEN & HOGEN-ESCH, *supra* note 103, at 45-46.

106. BULKELEY & BETSILL, *CITIES AND CLIMATE CHANGE*, *supra* note 1, at 64-65.

107. *Id.* at 65.

108. OXFORD ECON. FORECASTING, *LONDON’S PLACE IN THE U.K. ECONOMY, 2005-06*, at 41 (2005).

109. *Id.* at 6.

110. *Id.* at 38.

111. LONDON CLIMATE CHANGE AGENCY, *MOVING LONDON TOWARDS A SUSTAINABLE LOW-CARBON CITY: AN IMPLEMENTATION STRATEGY 1 (2007)* [hereinafter *LCCA, MOVING LONDON*].

112. GREATER LONDON AUTH., *ACTION TODAY TO PROTECT TOMORROW: THE MAYOR’S CLIMATE CHANGE ACTION PLAN 16 (2007)* [hereinafter *GLA, ACTION TODAY*].

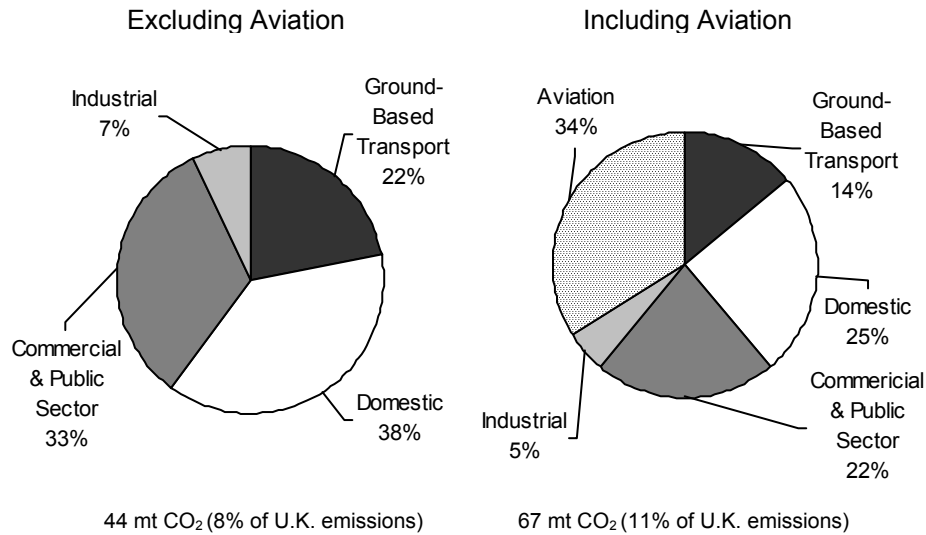


Figure 1: London's 2006 carbon dioxide emissions<sup>113</sup> Note that excluding aviation, domestic and commercial/public sector activities constitute the bulk of U.K. CO<sub>2</sub> emissions.

As shown in Figure 2, both domestic and commercial emissions of carbon dioxide are set to increase due to the predicted substantial population and building growth over the next two decades. Excluding aviation, emissions from transport are the third largest contributor, but have been stable, though an increase is also predicted in this area by 2025. Industrial emissions are set to decline still further from their 1990 baseline.

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113. *Id.*

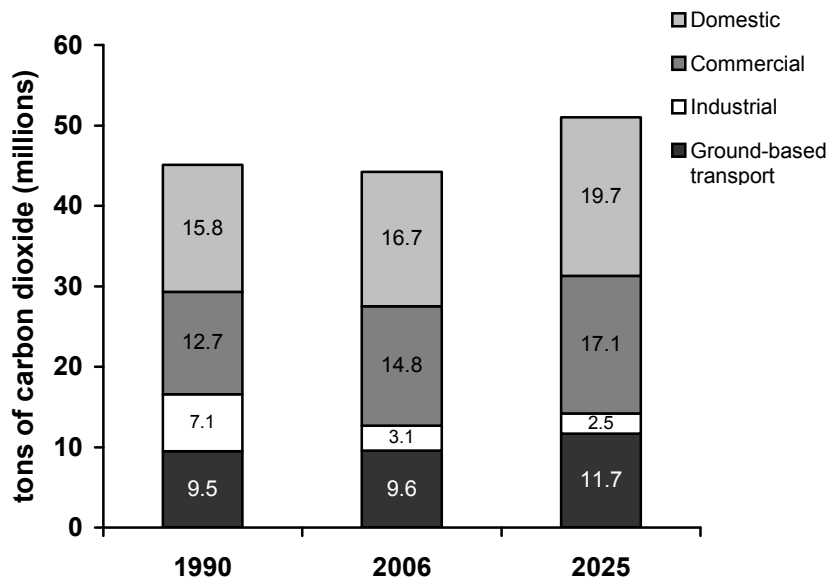


Figure 2: London's projected CO<sub>2</sub> emissions for 2025—the business as usual scenario (excluding aviation)<sup>114</sup>

### B. Competencies and Powers for Climate Governance in London

In terms of its administrative make-up, there are thirty-three local councils which make up the greater London area, several of whom have been pioneers in energy and climate change policy.<sup>115</sup> In 2000, a new administrative structure for London, the Greater London Authority (“GLA”) was established, marking a “significant new step in the history of London government and plan-making.”<sup>116</sup> Although London had previous experience of metropolitan wide government, notably with the Greater London Council, the GLA is distinctive in its dual structure, comprised of a directly elected mayor and a separate, directly elected twenty-five member assembly, with an administrative body of some 600 staff. The mayor oversees the work and budgets of the GLA group, including Transport for London,

114. *Id.* at 17.

115. Joe Painter, *Local Government and Governance*, in *THE CHANGING GEOGRAPHY OF THE UK* 296-314 (Vince Gardiner & Michael Hugh Matthews eds., 3rd ed. 2000).

116. Andy Thornley et al., *Business Privilege and the Strategic Planning Agenda of the Greater London Authority*, 42 *URB. STUD.* 1947, 1947 (2005).

the London Development Agency (LDA, one of nine regional development agencies in the United Kingdom), and the metropolitan police and fire services. In addition, the mayor is tasked with the development of statutory strategies on transport, housing, spatial planning, economic development, and the environment (including air quality, waste and biodiversity).<sup>117</sup>

These roles and responsibilities carry with them specific opportunities for addressing climate change. In the area of spatial planning, the mayor is responsible for the strategic development of the London metropolitan area through the London Plan.<sup>118</sup> While the thirty-two borough councils in London retain responsibility for preparing Unitary Development Plans, which set out specific proposals and guidelines for particular areas, they must ensure that these “conform broadly” to the London Plan.<sup>119</sup> In addition, the mayor must be consulted on planning applications that have potential strategic importance (for example, for housing that is over a certain threshold size or located in sensitive areas or major infrastructure) and can direct local borough councils to refuse planning permission to developments which are seen to be contrary to the London Plan.<sup>120</sup> In terms of transport, the Mayor has considerable powers through the development of the integrated transport strategy, the use of congestion charging, and the ability to shape the provision of public transport services in London. Under the powers of the Greater London Authority Act 1999, the Mayor of London introduced a charging scheme in central London in February 2003.<sup>121</sup> Like other development agencies, the LDA is charged, alongside innovation and economic development, with “contributing to security of supply” and “tackling climate change and contributing to other energy policy goals.”<sup>122</sup> In the Greater London Authority Act 2007, the mayor was charged with the duty to “take action with a view to mitigation of, or adaptation to, climate change” in line with national government policy and with the responsibility for preparing detailed strategies for both mitigation and adaptation.<sup>123</sup> This new duty places addressing climate change on a sub-

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117. See About the Greater London Authority, <http://www.london.gov.uk/gla/index.jsp> (last visited Jan. 23, 2009).

118. See GREATER LONDON AUTH., THE LONDON PLAN: SPATIAL DEVELOPMENT STRATEGY FOR GREATER LONDON 3 (2004) [hereinafter GLA, THE LONDON PLAN], available at [http://www.london.gov.uk/mayor/strategies/sds/london\\_plan/lon\\_plan\\_all.pdf](http://www.london.gov.uk/mayor/strategies/sds/london_plan/lon_plan_all.pdf).

119. *Id.*

120. *Id.*

121. LGA, CUTTING THROUGH THE GREEN TAPE, *supra* note 39, at 24.

122. DEP'T OF TRADE & INDUS., MEETING THE ENERGY CHALLENGE—A WHITE PAPER ON ENERGY 13 (2007), available at [www.berr.gov.uk/files/file39564.pdf](http://www.berr.gov.uk/files/file39564.pdf).

123. Greater London Authority Act, 2007, ch. 24, §§ 41-44 (Eng.), available at [http://www.opsi.gov.uk/Acts/acts2007/pdf/ukpga\\_20070024\\_en.pdf](http://www.opsi.gov.uk/Acts/acts2007/pdf/ukpga_20070024_en.pdf).

stantive legal footing, one not witnessed in the United Kingdom's other cities and regions.

### C. The Evolution of Climate Change Policy in London

The impetus to address climate change within London came directly from then Mayor Ken Livingstone and his office. During his first term, despite the lack of a statutory remit to do so, Livingstone developed an Energy Strategy for London<sup>124</sup> which placed climate change center stage (Table 1). Echoing the main tenets of national policy, this strategy held that "London should reduce its emissions of carbon dioxide by 20%, relative to the 1990 level, by 2010 as the crucial first step on a long-term path to a 60 per cent reduction from the 2000 level by 2050."<sup>125</sup> In order to pursue this goal, two strategies were adopted. First, the use of the mayor's powers through the London Plan to promote the use of on-site renewable energy generation (micro-generation) and Combined Heat and Power ("CHP"). Second, an emphasis on voluntary action through the formation of the London Energy Partnership, to assess the barriers and opportunities for energy efficiency and renewable energy in London. Also in Livingstone's first term, two other partnerships were formed to address aspects of the climate change challenge: the London Climate Change Partnership<sup>126</sup> and the London Hydrogen Partnership.<sup>127</sup> The focus on partnerships, as examined further below, was a testament to the relatively limited ability of the mayor and the GLA to have a significant impact on the ways in which energy is produced and used in London. In addition, this period witnessed the introduction of the London Congestion Charge which, while having little overall impact on greenhouse gas emissions, served to provide evidence that difficult policy measures could be implemented (Table 1).<sup>128</sup> The period from 2000 through 2004 can be summarized as one of experimentation with the formal powers of the mayor in relation to energy and transport policy, and the emergence of a partnership approach to climate governance in London.

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124. GREATER LONDON AUTH., *GREEN LIGHT TO CLEAN POWER: THE MAYOR'S ENERGY STRATEGY* (2004).

125. *Id.* at 55.

126. This partnership is focused on vulnerability and adaptation.

127. This partnership is concerned with research and development for new hydrogen technologies.

128. Georgina Santos & Blake Shaffer, *Preliminary Results of the London Congestion Charging Scheme*, 9 *PUB. WORKS MGMT. & POL'Y* 164-81 (2004).



Table 1: London's climate policy milestones<sup>129</sup>

Milestone	Goal	Approach
2000 Greater London Assembly and Mayor of London	Strategic oversight of policy issues affecting London.	Directly elected mayor who appoints a team of policy advisors. GLA members elected and operate with support of civil servants.
2001 London Climate Change Partnership	Assist London in preparing for the impacts of climate change by raising awareness, developing adaptation guidance, and improving the built environment.	Stakeholder group of thirty key government and non-government organizations. Commissions research; develops guidelines; provides responses to national and local policy.
2002 London Hydrogen Partnership	Work towards establishing a hydrogen economy for London and the U.K.	Stakeholder group supported by a secretariat and working groups. Undertakes research; establishes demonstration projects; disseminates information.
2003 London congestion charge	Reduce congestion and pollution in central London.	A levy is charged on every motorist entering the Congestion Charge Zone in inner-London.
2004 Energy Strategy for London	Reduce emissions of carbon dioxide by 20% below 1990 levels by 2010 as a first step to a reduction of 60% by 2050.	Promotion of energy efficiency and renewable energy through mayor's planning powers. Mandates the formation of the London Energy Partnership.
2004 London Energy Partnership	Assist in the delivery of London's energy policy; provide a single voice for the sustainable energy community in London; create new business opportunities for sustainable energy.	Building the knowledge base on the problems and opportunities for sustainable energy in London; Seeking to build capacity, training courses, knowledge sharing.
2004 London Plan	Provide planning guidance for large-scale projects and for planning policies for borough councils.	Includes measures to promote the generation of 10% of energy from renewable sources on-site for new developments.
2004 Mayoral elections	Mayor Ken Livingstone runs for a second term of office with climate change as a key policy issue and wins.	Various pledges on climate policy included in manifesto.
2005 London Climate Change Agency	Deliver projects that reduce London's GHG emissions in the energy, waste, water, and transport Sectors.	Established as a municipal company wholly owned and controlled by the London Development Agency ("LDA") with private and civil sector support. Develops projects, addresses regulatory and technical issues, seeks to create markets for energy efficiency and renewable energy.
2005 C40 Climate Leadership Group	Promote urban leadership on climate change and establish cost-effective means of addressing the issue.	Membership network of forty of the world's "global" cities. Exchange and transfer of best practices, project implementation, knowledge base development. Partnership with the Clinton Climate Initiative.
2007 London Climate Change Action Plan	Stabilize CO <sub>2</sub> emissions in 2025 at 60% below 1990 levels, with interim progress towards this goal.	Change technical and regulatory aspects of energy infrastructures; promote changes in domestic and commercial sector practice.

129. Bulkeley & Schroeder, *Governing Climate Change: London*, *supra* note 3, at 7-8.

2007 The Greater London Authority Act	Mainstream climate change within the policy framework of the mayor and the GLA.	Impose a new duty on the mayor to prepare, publish, and implement climate change mitigation and adaptation strategies.
2008 Further Alterations to the London Plan	Provides strategic planning guidance for large-scale projects and for planning policies for borough councils.	Promote a 20% reduction in CO <sub>2</sub> emissions from new developments through on-site renewable energy generation; prioritizes use of CCHP technologies before other forms of power generation.
2008 Adaptation Strategy	Protect and enhance the quality of life of Londoners; promote and facilitate the sustainable development of London by preparing for the impacts of climate change and extreme weather.	Identifies the key risks to London and Londoners (heatwave, flood, drought) and prioritizes the actions necessary to manage those risks (taking a prevent-prepare-respond-recover approach).

The second term of office for Ken Livingstone witnessed an important shift in the nature and direction of climate policy (Table 1). As one interviewee suggested, after having produced the Energy Strategy as a “broad foundation for what one could do” Mayor Livingstone then “decided in the 2004 election that this was going to be the biggest issue of the second mayoral term, it was the thing that became a personal priority for the Mayor.”<sup>130</sup> To that end, Livingstone’s 2004 manifesto included the commitment to develop a Climate Change Agency for London, and a Climate Change Action Plan.<sup>131</sup> In 2005, the London Climate Change Agency was established as “a municipal company wholly owned and controlled by the London Development Agency (“LDA”) and chaired by the Mayor” with private sector support from “BP, Lafarge, Legal & General, Sir Robert McAlpine, Johnson Matthey, and the City of London Corporation” and the support of “Rockefeller Brothers’ Trust, KPMG, Greenpeace, The Climate Group, the Carbon Trust and the Energy Savings Trust.”<sup>132</sup> While there remains a focus on partnership, with the creation of the LCCA attention has turned to the delivery of climate policy. The 2007 London Climate Change Action Plan stresses the means through which various policy initiatives, discussed in more detail below, will be delivered. At the same time, despite a recognition that the 20% goal for 2010 would not be reached, it establishes a more ambitious policy goal, such that the new target “is to stabilize CO<sub>2</sub> emissions in 2025 at 60% below 1990 levels, with steady progress towards this over the next twenty years.”<sup>133</sup> Under the Greater London Authority Act 2007, the mayor was given a “new statutory duty to contribute

130. Interview with Anonymous, in London, Eng. (Dec. 2007).

131. See Press Release, Greater London Auth., London’s Political and Business Leaders Come Together to Combat Climate Change (June 20, 2005), available at [http://www.london.gov.uk/view\\_press\\_release.jsp?releaseid=5234](http://www.london.gov.uk/view_press_release.jsp?releaseid=5234).

132. LCCA, MOVING LONDON, *supra* note 111, at 3.

133. GLA, ACTION TODAY, *supra* note 112, at 19.

towards the mitigation of, or adaptation to, climate change in the UK.”<sup>134</sup> As a result, the mayor is required to “produce statutory strategies for climate change mitigation and energy and for adaptation to climate change in London.”<sup>135</sup> As the first city to do so, London published an elaborate adaptation strategy in August 2008.<sup>136</sup> While some of the drivers and motivations may therefore change with the appointment of the new Conservative Party mayor, Boris Johnson, the legal requirement to address climate change at least provides a platform upon which to build future strategies.<sup>137</sup>

Over the past eight years London has witnessed a steep change in political will, policy attention, and project delivery for addressing climate change. The drivers and motivations behind this are necessarily multiple and complex, and include the commitment of key individuals, the courage of conviction born in part from interim policy success, a positive climate of public opinion, a lack of overt opposition from key interest groups and the emergence of new market opportunities in the carbon economy.<sup>138</sup>

#### D. Climate Governance in Action

As London’s climate policy has evolved, so too have the goals, measures, and initiatives established to reduce GHG emissions. One key issue has been the development of decentralized energy infrastructure, seen as a centerpiece of the 2007 Climate Change Action Plan:

The Mayor’s top priority for reducing carbon emissions is to move as much of London as possible away from reliance on the national grid and on to local, lower-carbon energy supply (decentralised [sic] energy, including combined cooling heat and power networks, energy from waste, and onsite renewable energy - such as solar panels) . . . The Mayor’s goal is to enable a quarter of London’s energy supply to be moved off the grid and on to local, decentralised [sic] systems by 2025, with more than half of London’s energy being supplied in this way by 2050.<sup>139</sup>

Following the shifts in national planning guidance detailed above, and in the wake of the “Merton Rule”, the London Plan initially included the target that 10% of predicted energy demand for a new development should be

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134. GLA, THE LONDON PLAN, *supra* note 118, at 195.

135. *Id.*

136. See GREATER LONDON AUTH., THE LONDON CLIMATE CHANGE ADAPTATION STRATEGY (2008), <http://www.london.gov.uk/mayor/publications/2008/docs/climate-change-adapt-strat.pdf>.

137. To date, Mayor Johnson has committed London to the target within the London Climate Change Action Plan and to the continued support of the C40 network.

138. Bulkeley & Schroeder, *Governing Climate Change: London*, *supra* note 3, at 6.

139. GLA, ACTION TODAY, *supra* note 112, at 105.

met through on-site generation.<sup>140</sup> Subsequent alterations to the London Plan in 2008 strengthened this approach such that new developments must reduce emissions of carbon dioxide by 20% through on-site renewable energy generation unless it can be “demonstrated that such provision is not feasible,”<sup>141</sup> an important caveat introduced by business organizations who sought to challenge the presumption that emissions should be reduced on a site-by-site basis. In pursuing the decentralization of energy provision, the London Climate Change Agency has developed an energy services company (“ESCO”)<sup>142</sup>:

The London ESCO has been established to design, finance, build and operate local decentralised [sic] energy systems for both new and existing developments. It has been established as a private limited company with shareholdings jointly owned by the London Climate Change Agency Ltd (with a 19% shareholding) and EDF Energy (Projects) Ltd (with an 81% shareholding).<sup>143</sup>

Through the London ESCO, the LDA and the mayor are therefore able to directly provide decentralized energy systems. This has also served as a foil to the concerns of the development industry that the targets for decentralized energy could not be met—the argument is made that the existence of ESCOs means that it is harder to make the argument that such provisions are not feasible. There are, however, considerable challenges in making the vision of a decentralized energy future a reality in London. Not least among these are the national regulatory context for energy supply and the limited price paid for energy fed back into the national grid from decentralized generation. Equally important has been resistance on the part of some business organizations to the provision of renewable energy on a site-by-site basis, citing issues of economic and environmental inefficiency. At the same time, it is unclear whether there is a market, either in the domestic or commercial sector, for decentralized energy systems, particularly those which provide community-based heating, while at the same time many decentralized energy systems, for example, biomass or waste to energy, remain relatively experimental.

The other key arena in which climate change policy has been put into action is with respect to the existing built environment. In terms of action in the domestic sector, like many governments in the United Kingdom and

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140. Themertonrule.org, <http://www.themertonrule.org/> (last visited Jan. 23, 2009).

141. GLA, *THE LONDON PLAN*, *supra* note 118, at 205.

142. See London Climate Change Agency, *The London ESCO: We're Working Towards Cleaner Energy for London*, <http://www.lcca.co.uk/server.php?show=nav.005003> (last visited Jan. 23, 2009).

143. LCCA, *MOVING LONDON*, *supra* note 111, at 6.

around the world, London has focused at least some of its attention on an education campaign to promote individual action to reduce emissions of greenhouse gases, DIY Planet Repairs.<sup>144</sup> More innovative has been the development of the Green Homes Programme,<sup>145</sup> in collaboration with the United Kingdom's Energy Savings Trust.<sup>146</sup> The intention behind this scheme has been to create a coherent package of information, give advice and provide grants directory for the public. Another is to develop the supply chain for "greening" homes, while at the same time undertaking marketing and face-to-face contact with those individuals seen as most likely to undertake changes within their own homes. In addition, a Green Concierge Service ("GCS"), described as a "unique partnership for London," has been developed by the mayor, the LDA and the services company, Ten. For an annual fee of £199, individuals are provided with a home energy audit and concierge services to assist with the selection and implementation of any energy efficiency or renewable energy schemes that they may wish to pursue. Rather than simply enabling individuals, through offering advice, the GCS seeks to effect reductions of GHG emissions more directly through providing a specific service.

In relation to corporate and public sector buildings, London's approach under the LCCA Green Organizations program has been two-fold. The Green500 scheme is a "carbon management service and a performance based awards scheme" aimed at the largest 500 organizations in London in which each member is "assigned a Carbon Mentor who will design a unique, holistic, carbon management plan," and carbon reduction target.<sup>147</sup> The Better Buildings Partnership is a scheme that seeks to draw together London's leading commercial property owners and tenants to overcome barriers to the retrofit of office buildings.<sup>148</sup> Established by the LCCA and the City Corporation of London, current members include British Land, Grosvenor, and Land Securities. At least one of the motivations behind the roll-out and adoption of such schemes is the E.U. Energy Performance in Buildings Directive, where buildings will be given energy performance labels. Equally important, however, was the rise of climate change on corporate social responsibility agendas. As one interviewee put it, "it doesn't ac-

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144. See DIY Planet Repairs, <http://www.london.gov.uk/diy/> (last visited Jan. 23, 2009).

145. See London.gov, Green Homes Programme, <http://www.london.gov.uk/mayor/environment/climate-change/greenhomes.jsp> (last visited Jan. 23, 2009).

146. See Energy Saving Trust, <http://www.energysavingtrust.org.uk/> (last visited Jan. 23, 2009).

147. See London: Green Organisations, <http://www.londonclimatechange.co.uk/greenorganisations/making-it-happen/green500/> (last visited Jan. 23, 2009).

148. See London Climate Change Agency, <http://www.lcca.co.uk/server.php?show=nav.00500a> (last visited Jan. 23, 2009).

tually matter whether a board believes in climate change, ‘cos climate change believes in them and they have no choice but to ensure that they are seen to be taking effective action on climate change.’<sup>149</sup>

Such approaches, based primarily on enabling others to take action and change behavior, inevitably encounter a range of barriers. One issue was that of the “skills gap” in relation to improving the energy efficiency of built environments. While some action has identified skills shortages and provided training, notably by the London Energy Partnership and through the new Green Homes Programme,<sup>150</sup> delivering change across a diverse set of supply chains with different training requirements remains challenging. Equally significant is the material condition of London’s existing housing stock, which is older than the U.K. average and where it has been difficult to persuade the utilities to deliver their Energy Efficiency Commitment spending because of the relative expense of achieving efficiency gains. At the same time, while the current policy and financial landscape for the initiatives outlined above appears healthy (with £7 million and £1 million allocated to the Green Homes and Green Organizations schemes respectively), they remain at the margins of policy in London and subject to the vagaries of political whim.

### III. CLIMATE POLICY AND ACTION IN LOS ANGELES

This Part reviews the development of Los Angeles’s climate change policy during the period from 2005 through 2008.

#### A. Los Angeles’s Socio-Economic and Environmental Profile

Los Angeles is the largest city in California and the second largest in the country with a population of 3.85 million.<sup>151</sup> The city spans over 465 square miles (1,204 square km)<sup>152</sup> and has a relatively low population density of 7,828 inhabitants per km<sup>2</sup> (New York City’s is 26,343).<sup>153</sup> As of 2005, the Los Angeles Metropolitan Area had a population of 17.8 mil-

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149. Interview with Anonymous, in London, England (Dec. 2007).

150. See London.gov, Green Homes Programmes, <http://www.london.gov.uk/mayor/environment/climate-change/greenhomes.jsp> (last visited Jan. 23, 2009).

151. This is a 2006 estimate. See U.S. Census Bureau, State & County QuickFacts, Los Angeles (city), California, <http://quickfacts.census.gov/qfd/states/06/0644000.html> (last visited Jan. 23, 2009).

152. See Los Angeles Mapped, <http://www.loc.gov/exhibits/lamapped/lamapped-exhibit.html> (last visited Jan. 23, 2009).

153. See SANDRA O’FLAHERTY ET AL., IS LOS ANGELES MORE CROWDED THAN NEW YORK? 6, [http://lewis.spps.ucla.edu/GIScontest/OsgoogEtAl\\_LANYDensity\\_report.pdf](http://lewis.spps.ucla.edu/GIScontest/OsgoogEtAl_LANYDensity_report.pdf) (last visited Jan. 23, 2009).

lion.<sup>154</sup> Because of the city's sea and air ports, which are among the largest in the world, and Los Angeles's size and continuing urban sprawl, air pollution from transport has been a major environmental problem for the city during the last decades.<sup>155</sup> Los Angeles is the most car-populated metropolis in the world with one registered automobile for every 1.8 people.<sup>156</sup> The scarcity of rainfall further exacerbates the problem as rain can clear smog to some extent.

Los Angeles's emissions of carbon dioxide amounted to some 51.6 million metric tons in 2004, a third of which were municipal (including electricity use and generation, sea and air ports).<sup>157</sup> Despite high emissions from transport due to Los Angeles's urban sprawl, the city's emissions are about two-thirds of the U.S. average. This is mainly due to below-average emissions in the housing sector (heating and cooling) thanks to the region's moderate climate, but also to California's comparatively stringent building and appliance codes. While the population of Los Angeles grew by about 10% during the last fifteen years, per capita emissions decreased by around 13% during this period.<sup>158</sup>

## B. Competencies and Powers for Climate Governance in Los Angeles

The City of Los Angeles is governed by a mayor-council system with fifteen city council districts.<sup>159</sup> It owns and operates its electric utility, the Los Angeles Department of Water and Power ("LADWP"), which is the largest publicly owned municipal utility in the United States. The LADWP provides water and electricity to the entire population of Los Angeles. It is a proprietary department, which means that it does not rely on taxpayer money.<sup>160</sup> The city also owns its sea and air ports and manages their on-the-ground operations. The Boards of Directors of the LADWP and Los Angeles's sea and air ports<sup>161</sup> are selected by the mayor and confirmed by

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154. See S. CAL. ASS'N OF GOV'TS, STATE OF THE REGION 2007, at 149 (2007), available at [http://www.scag.ca.gov/publications/pdf/2006/SOTR06/SOTR06\\_MetroRegions.pdf](http://www.scag.ca.gov/publications/pdf/2006/SOTR06/SOTR06_MetroRegions.pdf).

155. See THE CITY OF L.A., GREEN LA: AN ACTION PLAN TO LEAD THE NATION IN FIGHTING GLOBAL WARMING 15 (2007) [hereinafter GREEN LA], available at [http://www.lacity.org/ead/EADWeb-AQD/GreenLA\\_CAP\\_2007.pdf](http://www.lacity.org/ead/EADWeb-AQD/GreenLA_CAP_2007.pdf).

156. See Guide for Moving to Los Angeles, California, [http://www.moveinandout.com/city\\_guide\\_for\\_moving\\_to\\_los\\_angeles\\_california.aspx](http://www.moveinandout.com/city_guide_for_moving_to_los_angeles_california.aspx) (last visited Jan. 23, 2009).

157. GREEN LA, *supra* note 155, at 3.

158. *Id.* at 15.

159. See City of L.A., <http://www.lacity.org/council.htm> (last visited Jan. 23, 2009).

160. See L.A. Dep't of Water and Power, <http://www.ladwp.com/ladwp/cms/ladwp000508.jsp> (last visited Jan. 23, 2009).

161. They include Los Angeles International ("LAX"), LA/Ontario International ("ONT"), Van Nuys ("VNY"), LA/Palmdale Regional ("PMD"), and the Port of Los Angeles.

the fifteen-member City Council for a four-year term. Some major sources of GHG emissions are therefore largely controlled by the mayor.

Others, such as transport-related policies, are only marginally controllable by the city government and shared, in part, by the Los Angeles metropolitan area. While Los Angeles is able to address emissions from city-controlled operations, such as its fleet, bus services, and on-the-ground operations at its sea and air ports, it can only provide incentives to reduce road traffic. These include such measures as introducing bus and carpool lanes on some highways. Because roads and public transportation are shared among cities in the metropolitan area, the Los Angeles County Metropolitan Transportation Authority, a public agency, is charged by the state of California to oversee regional transportation planning and public transportation for the county of Los Angeles.<sup>162</sup>

### C. The Evolution of Climate Change Policy in Los Angeles

The city has issued several climate change plans since 1995, but they were narrowly focused on corporate emissions, the city's use of electricity to light its buildings, or the fuel used in its transportation fleets.<sup>163</sup> During Mayor Antonio Villaraigosa's campaign in 2005 he issued a Green Plan, the first mayoral candidate in Los Angeles to do so.<sup>164</sup> While addressing the main environmental issues Los Angeles faces, including air pollution, water quality, industrial waste, and lack of green space, it did not explicitly address climate change. Recognizing this gap, the mayor and his staff identified climate change specifically as a problem for Los Angeles upon taking office.<sup>165</sup>

Four aspects turned climate change into a priority issue for the city. First, the mayor and his staff recognized that "everything was kind of related and that the kinds of strategies that we would consider to reduce the city's greenhouse gas emissions were also things that would benefit us on all of the other environmental problems that Los Angeles faces."<sup>166</sup> A Resource Management Blueprint<sup>167</sup> and a Renewable Energy Goal<sup>168</sup> (Table

162. See L.A. County Metro Transp. Auth., About Us, [http://www.metro.net/about\\_us/default.htm](http://www.metro.net/about_us/default.htm) (last visited Jan. 23, 2009).

163. Interview with Anonymous, in L.A., Cal. (Oct. 2007).

164. *Id.*

165. *Id.*

166. *Id.*

167. See GRIEG SMITH, RENEW LOS ANGELES 5-23 (2006), available at [http://www.lacity.org/COUNCIL/cd12/renewla/cd12renewla243139873\\_08142006.pdf](http://www.lacity.org/COUNCIL/cd12/renewla/cd12renewla243139873_08142006.pdf).

168. See LADWP Board of Commissioners Moves to Accelerate Renewable Energy Goal to 20% by 2010, BUSINESS WIRE, Dec. 21, 2005, available at [http://findarticles.com/p/articles/mi\\_m0EIN/is\\_2005\\_Dec\\_21/ai\\_n15955733](http://findarticles.com/p/articles/mi_m0EIN/is_2005_Dec_21/ai_n15955733).



2) were already in place. Second, it was realized that climate change is a local and high-risk problem that will likely have significant adverse effects on Los Angeles.<sup>169</sup> Third, interviewees reported that the mayor has ambitions to run for the office of Governor of California. Given California's leadership position on climate change, it is suggested that developing a profile as a leader on climate change would put him at an advantage during a possible run for the governor's office.<sup>170</sup> Fourth, early on in his tenure, the mayor was contacted by the City of London to become part of their C40 network, providing opportunities to further raise his profile as a leader on climate change.<sup>171</sup> While measures to mitigate climate change do not seem to have direct impacts within or across levels of governance, the mayor's motivation seems to have been at least strengthened by action in other global cities and at the state level.

In May 2007, the mayor's office published an action plan, titled "Green LA: An Action Plan to Lead the Nation in Fighting Global Warming."<sup>172</sup> The plan includes over fifty initiatives to reduce the city's carbon footprint, incorporating several already established measures targeting air pollution, water conservation and energy decentralization, as they are also reducing GHG emissions. It was put together with the help of the coalition Green LA (which differs from the city's action plan, also called Green LA), consisting of over sixty environmental and community-based organizations focusing largely on climate change issues.<sup>173</sup> Green LA was formed in 2006 to address environmental issues in the city, a goal expressed in several speeches over the course of Mayor Villaraigosa's first year in office.<sup>174</sup> Green LA provides "environmental guidance and expertise to the City of Los Angeles in an exciting model of collaboration between decision-makers and advocates, helping to inform City policies and programs."<sup>175</sup>

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169. Interview with Anonymous, in L.A., Cal. (Oct. 2007).

170. *Id.*

171. *Id.*

172. See GREEN LA, *supra* note 155.

173. See GREEN LA, A GREEN LOS ANGELES: RECOMMENDATIONS TO THE CITY OF LOS ANGELES FROM GREEN LA 12 (2006) [hereinafter GREEN LA: RECOMMENDATIONS], available at [http://www.libertyhill.org/common/publications/Greenla/GREENLA\\_to\\_print.pdf](http://www.libertyhill.org/common/publications/Greenla/GREENLA_to_print.pdf).

174. See, e.g., Antonio R. Villaraigosa, Mayor of L.A., "City of Dreams": Remarks at Town Hall (Nov. 9, 2005), available at [http://www.lacity.org/mayor/myrspeeches/mayor\\_myrspeeches280948898\\_11092005.pdf](http://www.lacity.org/mayor/myrspeeches/mayor_myrspeeches280948898_11092005.pdf).

175. GREEN LA: RECOMMENDATIONS, *supra* note 173, at 3.

Table 2: Los Angeles' climate policy milestones<sup>176</sup>

Milestone	Goal	Approach
May 1999 – LADWP Green Power for a Green LA Program	Reach 10% of power from renewables.	DWP customers have the option to directly purchase energy produced from renewable resources.
June 2005 – RENEW LA, A Resource Management Blueprint	Shift to resource recovery waste disposal system to recover 90% or more of waste by 2025.	Twenty-year waste management strategy (2005-25); build seven conversion technology plants to draw valuable materials (e.g. plastics) from trash to use in manufacturing, and produce renewable energy/
December 2005 – LADWP Renewable Portfolio Standard / Renewable Energy Goal	Increase share of renewables to 20% by 2010 and 35% by 2030.	Generate energy from wind, solar and landfills.
July 2006 – Million Trees LA	Plant one million new trees within the city limits.	City-wide collaboration to plant and provide long-term stewardship of one million trees.
May 2007 – Green LA: An Action Plan to Lead the Nation In Fighting Global Warming	Reduce city's emissions by 35% by 2030.	Wide-spread municipal adoption of more efficient systems of water and waste management, energy production, and transportation.
April 2008 – Los Angeles Green Building Ordinance	Require that all new projects greater than fifty units or 50,000 square feet show compliance with the LEED certified level.	Provide incentives (e.g. expedite permit processing if LEED Silver designation is met); improve interdepartmental coordination (through a Sustainability Team that reviews and revises green building policies and projects); train staff in green building methods and policies and/or as LEED Accredited Professionals)
In preparation – Water and Wastewater Integrated Resources Plan	Decrease per capita water use by 20% to eliminate the electricity needed for water supply and wastewater discharge.	Adopt tiered water pricing, building code changes and other financial incentives; Adopt technical assistance programs for business and industry, large landscape irrigation efficiency programs, system infrastructure maintenance, and continue ongoing programs to educate communities, build involvement in conservation initiatives, and develop water-use awareness.
On the ballot – Expansion of transit system	Reduce emissions from transport sector	Introduce a county-wide 0.5 % sales tax to fund transportation infrastructure improvements.

The city's Green LA action plan commits the city to reduce GHG emissions by 35% of 1990 levels by 2030. As mentioned above, the action plan is to some extent a repackaging and synthesis of already existing measures. For example, it includes a Renewable Energy Goal of 20% by 2010 and 35% by 2030, adopted in December 2005, which should translate into a

176. Schroeder & Bulkeley, *Governing Climate Change: Los Angeles*, *supra* note 3, at 5.

17.5% reduction of emissions by 2030.<sup>177</sup> To coordinate the various actions promulgated under this plan, the mayor initially created a sustainable practices cabinet and later a climate action team, which includes members of each department.<sup>178</sup>

The transport sector, which is responsible for around half of Los Angeles' emissions, was left largely untouched by the Green LA action plan. A major barrier was the cost of building a transit system comparable to other major cities around the world and the perception that the support base was not yet strong enough. The investment required was estimated by interviewees to be around \$25 billion. Funding for transit in California "goes to the CA Transport Commission, and their mission, along with that of CALTRANS, is to build more roads."<sup>179</sup> While it is possible for cities in other states, such as Portland, Seattle, Denver, or Chicago, to share the financial burden of expanding public transit systems with the state, in California 90% of the funds must be locally generated.<sup>180</sup> A new county-wide sales tax of 0.5% was agreed to in the November 2008 elections to fund transportation infrastructure improvements.<sup>181</sup> Counties in California are able to place local option sales taxes before its voters, requiring a two-thirds majority of the vote. The revenue, estimated at around \$40 billion over thirty years, would currently include both transit and road improvements.

#### D. Climate Governance in Action

Los Angeles has, in the course of the last two to three years, established the basis for a comprehensive approach to addressing climate change within the city. While some of the measures adopted address both the need to mitigate and to adapt to climate change,<sup>182</sup> this research project focused primarily on policy and action in the area of mitigation. A number of goals, measures, and initiatives have been put into place to reduce emissions of greenhouse gases. These focus on many but not all areas of emis-

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177. Interview with Anonymous, L.A., Cal. (Oct. 2007). The target initially went beyond the requirements under the 2005 California Renewable Energies Act, which required that 20% of the electricity sold by investor-owned electric utilities in the state come from renewable sources by 2017. See S.B. 107, 2006 Leg., Reg.Sess. (Cal. 2006). The target year was then accelerated to 2010 by the CPUC. See CPUC: IMPLEMENTATION, *supra* note 94. It is currently under consideration to be strengthened further—possibly to 33% by 2020. *Id.*

178. See CPUC: IMPLEMENTATION, *supra* note 94

179. Interview with Anonymous, L.A., Cal. (Sept. 2007).

180. *Id.*

181. See L.A. County Metro. Transp. Auth., Measure R, <http://www.metro.net/measurer/default.asp> (last visited Jan. 23, 2009).

182. Above all, energy, measures addressed to water conservation, and security. See Schroeder & Bulkeley, *Governing Climate Change: Los Angeles*, *supra* note 3.

sions. For example, cities cannot themselves regulate vehicle tailpipe emissions. Energy supply in the United States is mostly regulated by state governments, except in the cases of cities which own their utilities, such as Los Angeles.

One important cornerstone of Los Angeles's climate change mitigation efforts is a reconfiguring urban infrastructure, including energy, water, and transit.<sup>183</sup> Energy and water supply reconfigurations are being conducted by the LADWP:

The Los Angeles Department of Water and Power . . . is embarking on the most ambitious transformation of any utility in America. In 2005, Mayor Villaraigosa challenged the department to accelerate plans to generate 20% of its electricity from clean, renewable sources from 2017 to 2010. Since then, LADWP has more than doubled its portfolio of renewable energy by purchasing wind, solar, and geothermal power.<sup>184</sup>

The LADWP is faced with the challenge that existing transmission lines cannot meet projected future energy demand at present, which are projected to increase by 43% over the next two decades.<sup>185</sup> The LADWP is addressing this problem mainly in two ways. First, it is raising electricity prices while introducing pricing structures to reward those who conserve energy, such as tiered, seasonal, and time-of-use pricing.<sup>186</sup> Second, it is shifting its power mix away from coal, which currently accounts for about 60% of the power source, to renewable energy.<sup>187</sup> The question of transmission lines to transport renewable energy is an unresolved problem. Both these strategies respond to the desire of the LADWP governing board to reduce the environmental impact of its operations:

One of our specific barriers to whether or not we can actually reach our greenhouse gas mandates is our ability to bring transmission, to develop adequate transmission to bring the green power in. So we are working with various groups in the environmental community to see if we can figure out corridors or some other way that allows us to build transmission, address these concerns of conservation, and habitats, and even developments.<sup>188</sup>

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183. *See id.*

184. GREEN LA, *supra* note 155, at 4.

185. Judy Pasternak, "Corridors" of Power Are Finding Resistance, L.A. TIMES, Mar. 24, 2008, at A8.

186. *See* Press Release, L.A. Dep't of Water & Power, LADWP Commissioners Approve New Water & Electric Rate Actions, LADWP News, Oct. 2, 2007, available at <http://www.ladwpnews.com/go/doc/1475/176896/>

187. Interview with Anonymous, L.A., Cal. (Oct. 2007).

188. Interview with LADWP Representative, L.A., Cal. (Oct. 2007).

The current emphasis is on the latter strategy: shifting the city's energy mix away from coal. There is a sense that this is the more politically viable option, even if the significant challenge of building additional transmission lines remains unresolved. The new pricing structures are too conservative to make a significant impact on GHG emissions. The state law requirement that Californian utilities supply 20% of their energy from renewable sources by 2010<sup>189</sup> is another reason why emphasis on shifting power supply is currently prioritized, even if it appears that several California-based utilities may not meet California's renewable portfolio standard. Given that some of the current solar and wind farm projects are based out-of-state,<sup>190</sup> the intricacies of federally regulated interstate commerce further complicate the situation. An additional hurdle is that existing transmission lines cannot be used given the new projects' locations and new transmission lines would have to pass through protected areas, where it becomes a question of relative gain between protecting nature and wildlife versus reducing emissions through expanding renewable energy.<sup>191</sup> Furthermore, the LADWP labor union and its protection of jobs in the traditional power infrastructure has made it difficult for the city to move ahead with its restructuring.<sup>192</sup>

The LADWP also faces the challenge of securing water for a growing population in a geographic area where demand from other parts of the region is increasing and water resources are depleting.<sup>193</sup> In addition, an increase in droughts is expected to further exacerbate the situation. For Los Angeles, water is a crucial issue in the context of climate change because water is imported into the city, which generates significant emissions of GHGs and negatively impacts habitat. 85% of water is imported from Northern and Eastern California (the Colorado River). From Northern California, water is transported partly by a water lift over the Tehachapi Mountains, which constitutes a huge expenditure of energy.<sup>194</sup> According to the California Energy Commission, about 19% of total electricity of all sectors combined is related to water, the biggest single source.<sup>195</sup> 20% of

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189. S.B. 107, 2006 Leg., Reg. Sess. (Cal. 2006).

190. See DEP'T OF WATER & POWER, CITY OF L.A., PLANNING TO MEET THE CHALLENGE 6 (2007), available at [www.assembly.ca.gov/acs/committee/c25/hearings/VI%20LADWP%20and%20SCPPAA%2003.26.07.ppt](http://www.assembly.ca.gov/acs/committee/c25/hearings/VI%20LADWP%20and%20SCPPAA%2003.26.07.ppt).

191. Interview with Anonymous, L.A., Cal. (Sept. 2007).

192. *Id.*

193. Interview with Anonymous, L.A., Cal. (Oct. 2007).

194. Interview with Anonymous, L.A., Cal. (Sept. 2007).

195. See Martha Krebs, Deputy Dir. for Research & Dev., Cal. Energy Comm'n, Address at the Assembly Comm. on Water, Parks, & Wildlife, Water Related Energy Use in Califor-

electricity in Los Angeles is expended merely on the transportation of water into the city.<sup>196</sup> Reducing the amount of imported water to Los Angeles would therefore have a noticeable effect on its emissions level.

Previously, Los Angeles has successfully reduced its extraction of water through efficiency improvements and reuse when required to do so in response to environmental harm at Mono Lake, in the Owens Valley system and in the Eastern Sierras.<sup>197</sup> Currently, the Los Angeles action plan envisages a decrease in per capita water consumption by 20% through water conservation and recycling, including capture and reuse of storm water.<sup>198</sup>

Regarding transit, the city is developing several transit-oriented developments (“TODs”).<sup>199</sup> While relatively successful in other cities such as Portland and Washington D.C., TODs in Los Angeles are facing a number of obstacles. A study reported by the Los Angeles Times found that TODs are not yet reducing traffic, rather they seem to increase congestion at such developments as they attract others to their urban infrastructure (shops, for example).<sup>200</sup> It was found that transit is not yet efficient and built out enough for a significant shift from vehicle use to public transport. Jobs and schools are usually not close to transit lines, making it difficult for TOD residents to leave their cars behind.<sup>201</sup>

Another key element of Los Angeles’s climate change policy is an emphasis on the need to change behavior, particularly with regard to energy and water use. To “help Angelenos be ‘energy misers,’” as the Los Angeles action plan puts it,<sup>202</sup> measures have been adopted ranging from customer rebates and a fund to acquire energy savings to distribution of energy efficient refrigerators and compact fluorescent light bulbs. In addition, the city requires that all new buildings exceeding 50,000 square feet or fifty-plus units become LEED (Leadership in Energy and Environmental Design) certified.<sup>203</sup> As building stock turns over every eighty years in Los

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nia (Feb. 20, 2007), available at <http://www.energy.ca.gov/2007publications/CEC-999-2007-008/CEC-999-2007-008.PDF>.

196. Interview with Anonymous, L.A., Cal. (Sept. 2007).

197. *Id.*

198. GREEN LA, *supra* note 155, at 6.

199. *Id.* at 23.

200. Sharon Bernstein & Francisco Vara-Orta, *Near the Rails but Still on the Road*, L.A. TIMES, Jun. 30, 2007, at A-1, available at <http://www.latimes.com/news/local/la-me-transit30jun30,0,4693321.story?page=3>.

201. *Id.*

202. GREEN LA, *supra* note 155, at 5.

203. LEED is a US Green Council award, covering five areas: site; materials; energy efficiency; water consumption; and interior air quality. See generally U.S. Green Bldg. Council, <http://www.usgbc.org/Displaypage.aspx?categoryID=19> (last visited Jan. 23, 2009).

Angeles,<sup>204</sup> targeting new builds will slowly yield emissions reduction results. This is extremely short compared, for example, to the United Kingdom's 1000 year building stock turnover.<sup>205</sup> Importantly, for the housing sector, the Los Angeles Department of City Planning is developing a Green Building Program focusing on the nexus between transit and housing. To this end, the department is developing a standard of sustainability for new building projects in the city, which it intends to regularly strengthen in accordance with technological development.<sup>206</sup> Many interviewees have referred to the substantial cultural barrier around transit. In the words of one:

There have also been efforts around reducing Los Angeles's carbon footprint by putting housing and jobs closer to transit and by increasing housing density in the past ten years. Given the cultural barrier around connecting high-income, single-family districts to the public transportation grid, progress has been slow and the focus has been on creating residential units in commercial quarters and increasing density there. This, however, also requires developing infrastructure (schools, etc.) to encourage families to come into these areas.<sup>207</sup>

Another impediment to building out Los Angeles's public transportation system is, as one interviewee noted, that "Southern California disposes of an especially virulent dose of "NIMBYism"—not in my back yard attitude. There is a sense of entitlement among especially rich Americans where they feel they can act in their narrow self-interest if they want to."<sup>208</sup> One prominent example is that plans for building a new light rail line are being held up by one particular neighbourhood community because of the associated noise.<sup>209</sup> Interviewees shared the impression that California-based businesses are generally more amenable to a culture of sustainability than companies coming in from out of state; this applies in particular to automobile companies. Companies are said to have adapted to California's more progressive stance: "[t]hey have learnt long ago that you don't fight it but shape it the best way you can because they cannot pick up and move from California."<sup>210</sup>

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204. Interview with Anonymous, L.A., Cal. (Sept. 2007).

205. See ENVTL. CHANGE INST., UNIV. OF OXFORD, REDUCING THE ENVIRONMENTAL IMPACT OF HOUSING (2006), available at [http://www.rcep.org.uk/urban/report/eci-app\\_e\\_embodied\\_energy.pdf](http://www.rcep.org.uk/urban/report/eci-app_e_embodied_energy.pdf).

206. See City of L.A. Env'tl. Affairs Dep't, Los Angeles Green Building Program, [http://www.lacity.org/ead/EADWeb-Sustainable/green\\_building\\_program.htm](http://www.lacity.org/ead/EADWeb-Sustainable/green_building_program.htm) (last visited Jan. 23, 2009).

207. Interview with Anonymous, L.A., Cal. (Sept. 2007).

208. *Id.*

209. *Id.*

210. Interview with Anonymous, L.A., Cal. (Oct. 2007).

Business behavior is targeted through a number of initiatives including a green business certification scheme, incentives for the growth of local green businesses and identification and promotion of locations for green businesses. Over fifty buildings are being designed to LEED standards in the private sector and forty-eight buildings in the public sector have already been completed.<sup>211</sup> The response from businesses is mixed. While there have been requests from members of the business community to the city to put in place codes and regulations on green buildings, there is also resistance to such measures from other segments of the community. As a compromise, measures have started low and are being strengthened over time to obtain the buy-in from a larger segment of commerce.<sup>212</sup>

#### IV. COMPARING LONDON AND LOS ANGELES: MODES OF GOVERNING AND THE ROLE OF LAW

We suggest that the development of urban climate change governance in London and Los Angeles is characterized by a plurality of modes of governing in which the role of law takes on different forms. Drawing on Bulkeley and Kern,<sup>213</sup> we suggest that four modes of governing climate change can be identified. First, a self-governing mode relates to the capacity of local government to shape its own activities, although this may be a result of impetus from other levels of government or other actors.<sup>214</sup> Second, control and compliance refers to the governing of climate change through the use of traditional forms of authority such as regulation and planning.<sup>215</sup> This mode is particularly associated with legal instruments. Third, we identify governing by provision, in which emission reductions are achieved through the delivery of particular forms of service and resource.<sup>216</sup> The final one is a mode of enabling, where governing takes place through facilitating, coordinating, and encouraging action through partnership with private and voluntary sector agencies, and in the form of various types of community engagement.<sup>217</sup>

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211. Margot Roosevelt, *Bid to Make Buildings Greener OK'd*, L.A. TIMES, Nov. 16, 2007, at B-1.

212. Schroeder & Bulkeley, *Governing Climate Change: Los Angeles*, *supra* note 3.

213. Bulkeley & Kern, *Local Government*, *supra* note 40.

214. *Id.* at 2244-45.

215. *Id.* at 2246-48.

216. *Id.* at 2245-46.

217. *Id.* at 2249-51.



### A. Self-Governing

Historically, municipal action in response to climate change has predominantly been undertaken in a self-governing mode, where municipal authorities seek to improve energy efficiency in their own operations, in housing stocks and vehicle fleets, as well as to change the type of energy used, through, for example, building integrated renewable energy systems or by switching to LPG as a type of fuel.<sup>218</sup> In the United Kingdom, the self-governing mode of climate response is in part a reflection of the changing agendas of what is required of local authorities from central government in relation to performance indicators. In this manner, self-governance is in part driven by requirements to comply with national standards, and therefore linked to the development of the framework of what local authorities are and are not allowed to do with respect to climate change. For the most part, however, both in the United Kingdom and elsewhere, self-governing responses to climate change have primarily been undertaken on a voluntary basis, driven by membership in transnational municipal networks where “getting your own house in order” is regarded as a critical step for municipal climate policy.

Evidence of this “self-governing” mode is seen both in London and Los Angeles. For example, in London emphasis has been on the development of iconic renewable energy generation projects to supply key government buildings.<sup>219</sup> In Los Angeles, transport measures include converting city fleet and city refuse collection trucks, street sweepers, and buses of the Metropolitan Transport Authority (“MTA”) to alternative fuels.<sup>220</sup> The city-owned Los Angeles World Airports (“LAWA”) purchases 15% of its electrical power through the LADWP’s Green Power program and is meeting green building specifications, improving recycling, using alternative fuel sources, and recycling water.<sup>221</sup> In addition, the C40 network, of which both cities are a part, is seeking to develop a tool for auditing and measuring the performance of municipal governments in which addressing their own emissions will be a critical step. It is not, however, the dominant response in either, if relatively significant in the case of Los Angeles.

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218. Allman et al., *supra* note 40, at 277 fig.1; *see also* BULKELEY & BETSILL, CITIES AND CLIMATE CHANGE, *supra* note 1, at 59-69; Bulkeley & Kern, *Local Government*, *supra* note 40, at 2244.

219. GLA, THE LONDON PLAN, *supra* note 118.

220. Schroeder & Bulkeley, *Governing Climate Change: Los Angeles*, *supra* note 3, tbl.2.

221. GREEN LA, *supra* note 155, at 6, 16, 24.

### B. Control and Compliance

The control and compliance mode of governing is perhaps that which is most closely related to the role of law in municipal climate governance. Here, municipalities use their powers to determine planning law, to regulate and sanction, and to promote activities that contribute to the reduction of GHG emissions. In both London and Los Angeles, this mode of governing has been deployed most notably with respect to planning. Through the provisions of the London Plan, in a context where increasing energy efficiency standards are being set by central government and the E.U., the mayor has mandated the increased use of renewable and decentralized energy generation in new developments.<sup>222</sup> Similarly in Los Angeles, the Los Angeles Green Building Ordinance requires that all new buildings exceeding 50,000 square feet or fifty plus units show compliance with the United States Green Building Council's LEED certified level.<sup>223</sup> There is clearly significant scope for utilizing municipal government's limited legal powers in the arena of new developments. This will address, however, only a small fraction of the emissions generated in any one municipality given the small proportion of the built environment that new development usually comprises, especially if the regulation addresses only larger buildings as in the case of Los Angeles. In addition, such approaches have met with significant challenge, notably from the business community in London but also in Los Angeles, and it is far from clear what the provisions of both the London Plan and the Los Angeles Green Building Ordinance will mean in practice given the higher initial building cost of "green" buildings.

The case studies suggest that in terms of seeking to change behavior, municipal governments in London and Los Angeles have limited powers and they have been reluctant to use those that they do have. Despite the success of the congestion charge in London, in terms of reducing local air pollution and congestion, raising revenue for public transport and increasing the use of alternative modes of travel, this mechanism has not yet been successfully explicitly used to reduce emissions of greenhouse gases.<sup>224</sup> A proposal to change the basis of the congestion charge in order to take account of vehicle greenhouse gas emissions was made, but later dropped by

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222. See discussion *supra* Part II.

223. *Id.*

224. Georgina Santos, *Urban Congestion Charging: A Comparison between London and Singapore*, 25 *TRANSP. REV.* 511, 523 (2005); see also Georgina Santos & Jasvinder Bhakar, *The Impact of the London Congestion Charging Scheme on the Generalised Cost of Car Commuters to the City of London from a Value of Travel Time Savings Perspective*, 13 *TRANSP. POL'Y* 22 (2006).

incoming Mayor Boris Johnson.<sup>225</sup> While the congestion charge may have made a marginal impact on the overall emissions of GHGs from transport in London through creating a modal shift, at present the area covered is too small to have any significant and long term impact on GHGs across the city.<sup>226</sup> Interestingly, there is significant support from the business community for a more comprehensive system of road-user charging, in order to relieve congestion.<sup>227</sup> Whether the GLA has both the power and the political will to undertake such a strategy, which is seen to be publicly unpopular, remains to be seen.

Los Angeles has been reluctant to do any more than address emissions from its city-owned fleet or operate car pool lanes on some of its highways, even though emissions from transport account for about half of Los Angeles's GHG emissions.<sup>228</sup> This omission can be explained culturally, given the strong sense among the general public of entitlement to, or aspiration for, single-family homes and multiple cars per household.

These two cases suggest that the explicit role of law in municipal climate change responses remains confined primarily to the area of planning and new development, and that here considerable contestation is occurring over the rights and responsibilities of different actors with respect to reducing emissions of greenhouse gases.

### C. Provision

Up until the mid-1990s, many municipal authorities across Europe and elsewhere in the world owned their energy generation, water provision, and waste services. In effect, they provided utilities for their communities. In this manner, "local governments were able to control the nature of infrastructure development and to influence practices of public consumption and waste in such a way as to limit emissions of greenhouse gases."<sup>229</sup> We term this means of governing climate change "provision"—the provision of infrastructures and services through which municipal governments are able to influence the practices of individuals and the trajectories of future development. With the rising tide of neoliberalism in the utilities sector, many such municipally owned companies were sold during the 1990s (indeed,

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225. See BBC News, Mayor Quashes £25 C-Charge Hike, <http://news.bbc.co.uk/1/hi/england/london/7494495.stm> (last visited Jan. 23, 2009).

226. Georgina Santos & Gordon Fraser, *Road Pricing: Lessons from London*, ECON. POL'Y, Apr. 2006, at 286-87.

227. Interview with Anonymous, in London, Eng. (Feb. 2008).

228. GREEN LA, *supra* note 155, at 14.

229. Bulkeley & Kern, *Local Government*, *supra* note 40, at 2245.

much earlier in the United Kingdom context), and as a result the direct provision of services has declined.<sup>230</sup>

This was not the case in Los Angeles, where the municipal authority retains ownership of its utility through the LADWP. Los Angeles was therefore able to address energy supply through its Renewable Energy Goal of reaching a share in energy supply of 20% from renewables by 2010 and 35% by 2030.<sup>231</sup> The motivation behind this is to phase out long-term contracts with coal-fired power plants in neighboring states and replace them with decentralized renewable energy projects in Southern California and neighboring states, covering solar, wind, biomass, and geothermal. While advertised as a measure to address climate change, it also addresses other objectives, such as the need to meet increasing energy demand and possible future energy scarcity as well as an aging infrastructure problem. Another example of provision in Los Angeles is its approach to waste management. Through investing in conversion technology plants, the city is aiming to increase the share of waste recovery to use in manufacturing and to generate renewable energy. In its city-owned sea and air ports, Los Angeles is greening on-the-ground operations through, for example, providing alternative marine power at its ports while docking and purchasing some 10% of green power, improving recycling and meeting green building specifications at its airports. Further examples of governing by provision include the city's "Water and Wastewater Integrated Resources Plan" to improve water, wastewater, and runoff management in the city as well as increasing open space through creating new parks, revitalizing the Los Angeles River as a naturalized river, and planting one million trees.<sup>232</sup> These examples demonstrate that governing by provision is a key mode through which climate change is addressed in Los Angeles.

In London, one interesting finding from this study is that, despite the formal ownership or provision of utility services, the "provision" mode of governance is still important, as two examples illustrate. First, the establishment of the LCCA as a municipally owned company has enabled the creation of the London ESCO, through which the LCCA can directly provide energy services—albeit that these "services" are about how to manage and reduce energy use, rather than the production and delivery of raw en-

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230. Matthias Finger, *Privatization of the Infrastructures*, in *LIMITS TO PRIVATIZATION, HOW TO AVOID TOO MUCH OF A GOOD THING* 235-39 (Ernst Ulrich von Weizsaecker et al. eds., 2005).

231. As previously mentioned, California has a similar goal, requiring by state law that Californian utilities supply 20% of their energy from renewable sources by 2010. *See supra* note 177 and accompanying text.

232. Schroeder & Bulkeley, *Governing Climate Change: Los Angeles*, *supra* note 3, tbl.2.

ergy to businesses and homes. Second, the GLA has sought to work in partnership with other organizations to deliver other forms of energy “service” to individuals and businesses, for example, the energy “concierge service.” Rather than being a traditional utility provider, municipal authorities in London have sought to re-imagine what energy “services” entail, and, in partnership with other organizations, supply them. Such ventures have either been done under the general powers which London has to address sustainability and well-being, or, in the case of the LCCA and ESCO, on the basis of protracted and complex negotiations over the legalities involved. Here, rather than acting as a facilitator, the legal standing of local governments may have impeded municipal action. Having achieved a robust legal status, however, the LCCA is now partially insulated from the politics of climate policy in London, and may be on a sound footing to further novel work on the provision of energy services.<sup>233</sup>

In both cases, the “provision” mode of governance has been a key facet, which may not come as a surprise given that energy supply infrastructures determine the level urban greenhouse gas emissions significantly.

#### D. Enabling

At the heart of the debate on the changing nature of “local governance” has been the proposition that modes of provision and control are waning, while local authorities are increasingly involved in “enabling,” or steering, other actors, in the voluntary and private sectors and at the community level, to act for the public good. An enabling mode of governing involves, for example, local governments in promotional activities, public-private partnerships, and the provision of financial incentives or subsidies to encourage action by other actors for particular policy ends.<sup>234</sup> In the United Kingdom, this mode of governing is not only a response by local governments to their declining formal powers and competencies, a means of getting things done when other channels are blocked, but is increasingly mandated by central government.<sup>235</sup> Local governments are now legally obliged to work with other partners in the Local Strategic Partnership, to establish Local Area Agreements, and develop a sustainable community strategy. Local governments also now “contract out” services, such as waste collection and disposal or home energy efficiency improvements, in ways that make “partnership” working inevitable.<sup>236</sup> Therefore, while par-

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233. *See id.*

234. Bulkeley & Kern, *supra* note 40, at 2249-51.

235. *See* discussion *supra* Part II.B.

236. Bulkeley & Schroeder, *Governing Climate Change: London*, *supra* note 3.

ticular instances or examples of enabling action in London or other United Kingdom cities may be spontaneous, or emerge from the private rather than the public partner involved, the current approach towards, and legal context for, local government in the United Kingdom makes “enabling” an everyday reality for most local authorities. In the United States, “enabling” modes of governance are often created through funding flows from grant-in-aid schemes to enable the implementation of national goals set by the national government.

The formation of public-private partnerships has been central for London. It established the London Climate Change Partnership (2001) among government and non-government organizations to assist London in preparing for the impacts of climate change through raising awareness, developing adaptation guidance, and improving the built environment. The London Hydrogen Partnership (2002) and London Energy Partnership (2004) followed, facilitating the establishment of a hydrogen economy for London and the United Kingdom and assisting in the delivery of London’s energy policy. In addition, the C40 Climate Leadership Group (2005) was established to promote urban leadership on climate change beyond London and the United Kingdom.<sup>237</sup> In Los Angeles, while the creation of public-private partnerships has not been as central a facet as in London, “enabling” modes of governance have been employed in the promotion of a green economic sector, such as through identification and promotion of locations for green businesses, collaboration with the private sector to offer effective incentives for the growth of local green businesses, and a certification scheme for green businesses.<sup>238</sup>

Given the limitations of power in the local government context and the extent to which GHG emissions are linked to urban lifestyles and economic activity, governing by “enabling,” promoting, or steering is used to increase the involvement of actors who would otherwise not be easily reached.

### E. Summary

While all modes of governance identified play a certain role in the overall approach to reducing GHG emissions at the local level, the examination of the two cases of London and Los Angeles makes a number of important discoveries in their relative importance and how they relate to the role of law. First, the direct use of legal instruments by municipal authorities to govern climate change in London and Los Angeles is limited, but it still

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237. *See id.*

238. Schroeder & Bulkeley, *Governing Climate Change: Los Angeles*, *supra* note 3, tbl.2.

plays a critical role especially in relation to planning and new development.<sup>239</sup> Second, legal frameworks adopted at other levels of government are important in shaping the possibilities for local action. Some legal frameworks provide an *enabling* context of multilevel governance, such as green building codes in the United States or the E.U. Energy Performance of Buildings in the United Kingdom.<sup>240</sup> Other frameworks are more neutral, such as the new requirements for United Kingdom local authorities to develop local area agreements, which may lead to new local responses.<sup>241</sup> Yet others create a *constraining* multilevel governance context, such as energy market regulation.<sup>242</sup> Third, as municipalities seek to move within and beyond these frameworks, we can see that new modes of governing through provision and through enabling are becoming ever more important.<sup>243</sup>

### CONCLUSION

The cases of London and Los Angeles demonstrate that while both cities have adopted ambitious plans addressing climate change mitigation with targets and timetables going beyond any action at the national level, their limitation to perform climate change policy is somewhat determined by legal frameworks at national or state levels.<sup>244</sup> For example, emissions from the housing sector are addressed only to the extent of new developments and already established energy standards, such as LEED in the United States or Title 24 in California. The existing housing stock is ignored for now, effectively leaving untouched the bulk of emissions from the housing sector, as this would require measures at national or state levels. Control and compliance modes of governance are used where legal frameworks already exist, such as energy efficiency standards set by the United Kingdom government and the E.U. or the Los Angeles New Building Ordinance requiring compliance with nationally-recognised LEED certified levels of energy efficiency in buildings. They remain contested by local business communities because the associated extra costs. An exception to this, and an example of municipal entrepreneurship using a control and compliance measure, is the London congestion charge, hailed as largely successful. It was introduced to reduce local air pollution and congestion, but also re-

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239. See discussion *supra* Part IV.A.

240. See discussion *supra* Part IV.D.

241. See discussion *supra* Part IV.A.

242. See discussion *supra* Part II, III.

243. See discussion *supra* Part IV.C, D.

244. See discussion *supra* Part II, III.

duced carbon dioxide emissions, if only marginally. It is now copied in other parts of the world.<sup>245</sup>

Self-governance has been important in the initial stages of municipal climate policy. Measures addressing municipal emissions have been driven largely by membership in transnational municipal networks and schemes measuring the performance of municipal governments in addressing their own emissions. Acting as role model and voluntarily limiting city government emissions has been important for generating acceptance among local businesses and citizens of measures to mitigate climate change. Examples include renewable energy generation for government buildings in London and public transport and on-the-ground operations at city-owned sea ports and airports in Los Angeles.<sup>246</sup>

Provision and enabling modes of governance in the local context have been the key tenets of municipal climate change governance. It has been especially important to involve local stakeholders and build a local support base in developing context-specific solutions, which more often than not address multiple issues at the same time. The various partnerships created in London are examples of this, as is the emphasis on the business sector in Los Angeles. Providing decentralized and renewable energy infrastructures and services has been central in both cities. While Los Angeles is fortunate to own the utility that services the entire city, London has created a company to provide energy-related services.<sup>247</sup>

Given the gaps in action among the different levels of government, the role of law has been limited in urban climate governance to date. Emphasis has remained on governance by providing new energy infrastructure and enabling public-private partnerships to emerge that provide services that help reduce urban emissions.<sup>248</sup> This is not likely to change without national and international levels adopting control and compliance measures addressing climate change. While climate change policies at the city level oftentimes encompass co-benefits, such as reductions in air pollution or job creation, and therefore make it attractive for municipalities to move into this policy arena, national governments and the international climate negotiations seem somewhat more hesitant to move in this direction.

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245. See discussion *supra* Part IV.B.

246. See discussion *supra* Part IV.A.

247. See discussion *supra* Part IV.B, C.

248. See discussion *supra* Part IV.C, D.