Review Essay

Learning from Europe on Climate Change

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Energy and Climate Change: Europe at the Crossroads
David Buchan. Oxford: Oxford University Press, 2009. £25.00/ $55.00. 218 pp.

As Paula J. Dobriansky and Vaughan C. Turekian point out in their commentary elsewhere in this issue, with the world gathering in Copenhagen this December to replace the Kyoto Protocol, the relative successes of existing regional and national approaches are of great interest. It is particularly useful to look for lessons from the only region of the globe that has moved in a coordinated and effective way to limit its greenhouse-gas emissions: Europe. David Buchan's *Energy and Climate Change: Europe at the Crossroads* gives a comprehensive overview of the European Union's energy policy, and how the shared threat of climate change encouraged collective action, in effect creating a common energy policy within the EU. This book should be a guide for international and national policymakers for how to create a climate-friendly energy policy.

Scientists say that the levels of carbon in the atmosphere have not been this high for 15 million years, and the last time they were, global temperatures were 3–5°C warmer and sea levels approximately 23–37 metres higher than today.[1] The unambiguous scientific consensus, as stated in the Intergovernmental Panel on Climate Change's most recent assessment, is 'warming of the climate system is unequivocal' and there is 'very high con-

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fidence' that this warming is probably caused by man-made emissions of carbon dioxide and other greenhouse gases.[2] An international agreement in Copenhagen would ask the countries of the world to come together to bring emissions below dangerous levels by 2050.

An agreement to stabilise and reduce emissions must overcome the differing priorities of each nation. The least-developed countries call for funding for direct adaptation, so that they are not overwhelmed by the effects of climate change. Tropical nations seek a reliable way to finance the protection of their forests from the pressures of deforestation, the source of 20% of greenhouse-gas emissions. Small island nations want assurances that they will retain some form of sovereignty should they slip beneath the waves. Large growing nations, particularly China and India, say that they cannot agree to a cap on their emissions, as that will only prevent them from enjoying the economic growth that the West has already achieved. Meanwhile, developed countries, particularly the United States, maintain they cannot abide a reprise of Kyoto, with mandatory caps on the developed world and no commitments from the developing world. Oil-producing nations like Saudi Arabia have asked for financial reimbursement to replace revenues lost because of limitations on oil sales. Bridging these divides will be a substantial challenge.

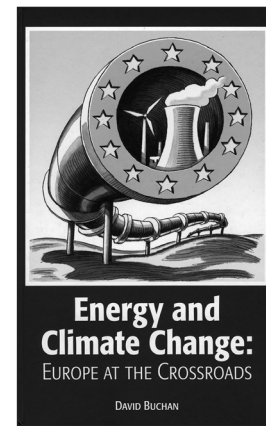
How can such a diverse set of agendas be brought into agreement? For a possible answer we may look to Europe. The 27 states of the EU exhibit significant diversity: some are large, rich or growing fast, while others are small, poor or economically stagnant. Europe has crafted a common climate policy that includes the coal miners of Silesia, the bankers and traders of London, the auto manufacturers of Germany, impoverished rural farmers in the Carpathians, and environmentalists throughout. As Buchan reveals, action on climate change has come to define the EU's common energy policy both domestically and internationally.

Why the EU leads on climate change

The European Union perceived the threat of climate change far earlier than the rest of the world. Buchan notes that even before the United Nations' 1992 Earth Summit in Rio de Janeiro, Brazil, which produced the first major

international agreement recognising the threat of climate change, the ministers of the EU were beginning to talk about stabilising emissions 'in the Community as a whole' (p. 1). One of the reasons for this early and enduring embrace of collective action was the EU's emphasis on the 'precautionary principle'. This states that the lack of scientific certainty about serious or irreversible damage should not be used as an excuse to prevent harm. It was enshrined as part of EU law in the 1992 Maastricht Treaty and guides EU consumer and environmental law.[3]

Europe's embrace of the precautionary principle has been vindicated as scientists have exposed the potentially catastrophic risks of unmitigated climate change. As economists have begun to tackle this issue, it has also become clear that the costs of action need not be crippling. The Stern Report of 2006, for example, argued that 'the benefits of strong and early action far outweigh the economic costs of not acting'. The report noted that an investment of approximately 1% of global GDP per year could prevent future annual losses of at least 5%, and possibly over 20%, in the future.[4]



The other source of EU leadership on climate change is the wide support that action receives. In an early 2009 poll, conducted as the global recession was reaching its height, 50% of Europeans identified climate change as one of the greatest threats facing the world, behind only 'poverty, lack of food and drinking water' and 'a major global economic downturn'.[5] This support can be contrasted with the United States, where a recent poll indicated that only 37% of Americans believe that there is solid evidence that the earth is warming because of human activity.[6]

The European Union has been able to use popular support and its legal traditions to put together a comprehensive energy plan to address climate change. Only a decade ago, there was little that was 'European' about the continent's energy policy. Each country had set its own policies for decades. But as Buchan makes clear, attempts to address the problem of climate change effectively created EU energy policy. The newly ratified Lisbon Treaty offers a crucial caveat to the EU's energy policy, saying that the

EU 'shall not affect a member state's right to determine the conditions for exploiting its energy resources, its choice between different energy sources and the general structure of its energy supply'.[7] However, decisions made over the last decade indicate that national governments prefer to address climate change through international collective action at the EU level.

The European model

Europe's early embrace of action on climate change has resulted in considerable successes. Although some countries are likely to overshoot their Kyoto targets, as a whole, Europe will meet its Kyoto-agreed targets for emissions reductions. The European Environment Agency has reported that the overall domestic emissions of the 27 EU nations were 9.3% below 1990 levels in 2007, and the 15 western EU nations will meet the 2012 target of reducing emissions by 8% below 1990 levels.[8] This success is in contrast to some other Kyoto signatories, such as Canada, which will overshoot its target by over 30%.[9] The key to the EU's effectiveness in reducing emissions lies in a regulatory environment characterised by a balance of power between the EU in Brussels and national capitals across Europe.

The most visible representation of the EU's action on climate change is the Emissions Trading Scheme (ETS). Within the European Union, there is a price for emitting carbon. This price is set by daily trading of permits to emit greenhouse gases. The EU has set a national cap on emissions for each of the 27 member countries that applies to large emitters, including utilities, refineries and major manufacturers. This cap covers approximately 40% of total emissions. Emitters are allocated a specific number of permits over a commitment period, which they can then trade among themselves. This cap-and-trade mechanism allows a free market to determine the price of carbon, while the EU determines the total emissions allowed. As of early November 2009, the spot price for a tonne of carbon was approximately €14. Trading takes place every day across Europe, and industry and utilities must factor the price of carbon into every business decision they make.

Buchan is clear that implementing the ETS took a great deal of trial and error over the last four years in order to reach the relatively stable and predictable level the world sees now. The first phase of the ETS, which began

in January 2005, was a failure. Prices jumped in the first six months from approximately €7 to over €25 per tonne and peaked at over €30 in April 2006, before collapsing to near zero by September 2007. As this experience showed, any market depends on scarcity to provide demand. As businesses began to turn in their permits for emissions, most began to realise that they had more than enough to continue to emit at current levels, and had no need for extra permits.

The problem was that the EU had delegated the right to determine the number of emission permits that were allocated to national governments. The predictable result was that, in the absence of quality information about recent emissions, each government listened to its industrial lobbies and claimed a high level of permits in order to give its home industries an advantage. When it became clear that there was a surplus of permits being traded on the market, prices collapsed. By the end of the first phase in 2007, permits were effectively worthless.

For the second commitment period (2008–12), the EU revised its permit-allocation policies to address its earlier failures. While the first phase did not succeed in reducing emissions below its baseline level, it did provide the European Commission with better information about the actual levels of emissions that were driving the use and trading of permits. With this firm information, the Commission was better able to allocate permits based on real, not claimed, emissions. So far, this has resulted in a second commitment period that is more stable, even though prices have fallen in response to the economic slowdown, much as one would expect. The ETS is still not perfect, it but it has shown to the world that such a system can work on a large scale.

More important than the specific policies established by the EU are the supranational negotiations that determine them. The unique nature of policymaking within the EU provides an important model for international institutions seeking to address climate change. Though anyone who has worked with the EU can attest to the maddening bureaucracy of Brussels, the institutional balance between the European Commission, the European Parliament and national capitals has proved to be a workable and coherent way to craft EU climate policy. Buchan's analysis of how the European

Commission acts to balance power between large and small, rich and poor states is excellent. His discussion of the process leading to the EU's 20/20/20 pledge in December 2008 is particularly valuable, and should be required reading for climate negotiators in the UN process. This plan would reduce European emissions by 20%, increase energy efficiency by 20%, and make renewable power 20% of the energy supply by 2020. The story of how this complex and detailed plan came about shows how negotiations among parties acting in their own interests can still produce progress towards an ambitious goal. In particular, Buchan credits French President Nicolas Sarkozy's 'demonic style of chairing the EU' (p. 118) in the second half of 2008 for pushing through such an ambitious plan. Sarkozy made use of the powers of the EU presidency, placed relentless pressure on national capitals, and engineered rigorous coordination in the European Parliament to push through the plan. He balanced the economic and security needs of Eastern European states, especially coal-dependent Poland, with the more environmentally oriented desires of richer states. And he accomplished all this in the middle of an economic calamity.

That the EU could agree to such an ambitious plan despite the significant economic divisions among its members shows the unity of Europe in addressing the challenge of climate change, and the efficacy of the EU's power structures in setting up an international agreement. The key is that each state accepted the authority of the EU to make these decisions, felt that its concerns were addressed and, most importantly, understood the urgency of reducing carbon emissions. For the EU process to become a model for the UN process at Copenhagen, these three factors will have to come together among the top emitters.

Failures of the model

Though the EU approach to climate change provides a model for the world, there are some areas where its efforts to assert leadership have not been successful. Firstly, a general lack of budget authority has undercut the EU's ability to fund the research, development and deployment of environmental technologies. Secondly, its approach to nuclear power shows how divisive issues can sometimes create muddled and self-defeating policies.

Most experts agree that new technologies, including wind, solar, carbon-capture and sequestration, will be vital in mitigating climate change. Government-sponsored research will be particularly important in making the basic advances that can then be developed and deployed by private firms. Currently the EU is spending about €3 billion a year on research and development in clean energy, and the European Commission has proposed to increase this to €8bn per year. While this may sound like a large amount, it falls well behind American plans to spend $112bn over the coming two fiscal years on 'green' funding and Chinese plans to spend approximately $221bn over the next two years.[10]

The EU is a supranational body that has been given a great deal of regulatory authority, but its budgetary authority is still small relative to that of national governments. As a result, clean-technology policy is driven by subsidies from individual states. Buchan cites the example of Germany, where the government guarantees a long-term, above-market price to renewable electricity producers. The German government's decision to offer a 'feed-in tariff' on solar power has guaranteed a market for this form of energy. However, Germany has successfully prevented that subsidy from applying to solar projects built in other countries. Clearly, an EU-wide policy allowing Germans to invest their solar-technology funding in much sunnier Spain in exchange for some sort of clean-energy credit would have been a more economically efficient model. But this would not have provided jobs and prestige to German industry. Moreover, national governments have successfully undermined any attempts by the European Commission to open trade in clean energy across borders, and the Lisbon Treaty provides for national control over energy policy. Under this policy, and without additional budget authority, the EU as a whole will never become a leader in renewable-energy research, development or deployment to the extent that the United States or China seem poised to do.

Buchan makes clear his view that deploying nuclear power on a large scale will be essential for any move to a low-carbon economy. Indeed, there seems to be little chance of providing large-scale baseload, zero-emissions electricity without atomic power, despite the cost of building nuclear plants. But EU nuclear policy, in another instance of individual states undermining

collective action, has been undercut by competing views within Europe on the utility, cost, safety and future of atomic power. Calling nuclear power 'the impossible consensus', Buchan gives the EU's nuclear-power policy an 'A–' for potential, but only a 'D' for performance. Although the European Atomic Energy Community (Euratom) was created in 1957 to ensure stable and predictable access to nuclear power, efforts by the European Commission to increase the EU's nuclear-regulatory authority, including a 2003 draft directive to this effect, have been resisted by national governments. Euratom could have set standards for safety, waste disposal and reactor design. The fact that it has not been allowed to live up to its potential is a testament to the enduring power of the Chernobyl accident to evoke fear among Europeans. Atomic power is a highly politicised issue, perhaps more than any other energy issue. Therefore, it might be logical to leave nuclear decision-making to local governments. If, however, the promotion of efficient, safe and productive atomic power is a genuine goal, and not just a political smokescreen, a Europe-wide regulator could ensure a better nuclear future.

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The EU's precautionary principle acts to prevent damage to the environment by pre-empting harmful action. This philosophy has led to a policy that effectively limits current emissions and promotes efficiency through a price mechanism. While far from perfect, European energy policy presents us with a road map for how the world can begin to address climate change. Individuals and nations will have to learn to use our existing energy supply more efficiently and cost effectively, and we will have to deploy existing renewable technologies on a larger scale.

Europe came to a consensus about the dangers of climate change prior to the rest of the world, and has a head start in crafting the policies to mitigate its worst effects. Europe's common foreign policy prioritises taking action on climate change. It was only through European action that the Kyoto Protocol was finally brought into effect, and European leadership over the last decade has ensured that climate change has risen to the top of the inter-

national agenda. Buchan's book, by detailing the successes and failures of Europe's trailblazing efforts, can act as a guide for how other nations can achieve a climate-friendly energy policy before it is too late.

Notes

1 Stuart Wolpert, 'Last Time Carbon Dioxide Levels Were This High: 15 Million Years Ago, Scientists Report', ScienceDaily.com, 9 October 2009, http://www.sciencedaily.com/releases/2009/10/091008152242.htm.

2 Intergovernmental Panel on Climate Change, *Climate Change 2007: The Physical Science Basis*, Working Group I Contribution to the Fourth Assessment Report (Cambridge: Cambridge University Press, 2007), Summary for Policymakers, pp. 2–3.

3 For more on the precautionary principle and EU climate policy, see John R. Schmidt, 'Why Europe Leads on Climate Change', *Survival: Global Politics and Strategy*, vol. 50, no. 4, August–September 2008, pp. 83–96.

4 Nicholas Stern, *The Economics of Climate Change: The Stern Review* (Cambridge: Cambridge University Press, 2006).

5 'Europeans Attitudes Towards Climate Change', Special Eurobarometer 313, July 2009, http://ec.europa.eu/public_opinion/archives/ebs/ebs_313_en.pdf.

6 Pew Research Center for People and the Press, 'Modest Support for "Cap and Trade" Policy: Fewer Americans See Solid Evidence of Global Warming', 22 October 2009, http://people-press.org/reports/pdf/556.pdf.

7 Treaty of Lisbon, Title XX: Energy, Article 176A (2), 2007/C 306/01, available at http://europa.eu/lisbon_treaty/full_text/index_en.htm.

8 European Environment Agency, 'EU Greenhouse Gas Emissions Fall for Third Consecutive Year', Press release, 29 May 2009, http://www.eea.europa.eu/pressroom/newsreleases/2009-greenhouse-inventory-report.

9 'National Inventory Report: Greenhouse Gases Sources and Sinks 1990–2007', Submission by Greenhouse Gas Division, Environment Canada, to the United Nations Framework Convention on Climate Change, April 2009.

10 Ben Furnas, 'We Must Seize the Energy Opportunity or Slip Further Behind: A Primer on Global Competition in Green Technology Investments', Center for American Progress, 20 April 2009.