Economic Instruments in UK Environmental Law Reform: Is the UK Government 'Sending the Right Signals'?

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A. New Institutional Frameworks for Sustainable Development

In the quest to promote more environmentally sustainable patterns of development, many countries, including the United Kingdom (UK), have initiated in recent years a flurry of institutional and regulatory reforms.[1] Since the late 1980s, 'sustainable development' has been promoted by scholars and policy-makers alike as the overall ideal of environmental policy.[2] The sustainability discourse emerged from European and broader international networks and is based on defining economic prosperity as dependent on environmental health.[3] During the 1990s, sustainability thinking evolved from the margins of British environmental policy to holding a statutory and institutional presence that heralded a new era of environmental management.[4] The

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1 See generally K. Ginther, et al. (eds.), *Sustainable Development and Good Governance* (Nijhoff, 1995); K. Hausker, 'Reinventing Environmental Regulation: The Only Path to a Sustainable Future' in (1999) 29 *Environmental Law Reporter* 10,148.

2 The literature is now voluminous: see e.g. J.G. Frazier, 'Sustainable Development: Modern Elixir or Sack Dress?' in (1997) 24(2) *Environmental Conservation* 182; R.A. Carpenter, 'Can Sustainability be Measured?' in (1994) 21 *Ecology International* 27; A.D. Basiago, 'Methods of Defining Sustainability' in (1995) 3 *Sustainable Development* 109.

3 See P. Taylor, *An Ecological Approach to International Law* (Routledge, 1998); R.L. Revesz, R.B. Stewart and P. Sands (eds.), *Environmental Law, the Economy and Sustainable Development* (Cambridge University Press, 2000); N. Haigh and C. Lanigan, 'Impact of the European Union on UK Environmental Policy Making' in *UK Environmental Policy in the 1990s* (T.S. Gray (ed.)) (Macmillan, 1995) 18.

4 See generally H. Voisey and T. O'Riordan, 'Governing Institutions for Sustainable Development: The United Kingdom's National Level Approach' in (1997) 6(1) *Environmental Politics* 24; D. Osborn, 'Some Reflections on UK Environment Policy, 1970–1995' in (1997) 9(1) *Journal of Environmental Law* 4.

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enactment of the Environment Act 1995,[5] for example, made promotion of sustainable development the 'principal aim' of the newly established Environment Agency.[6] Sustainable development later also became the key statutory goal for the Regional Development Agencies,[7] and local government authorities.[8] At a policy level, national Sustainable Development Strategies were published in 1994 and 1999 to set a framework for specific departmental initiatives.[9] Concomitant institutional reforms included the creation of a 'Green Ministers' network to foster co-ordination of environmental policy across government, and the establishment of the advisory Round Table on Sustainable Development[10] and the Government Panel on Sustainable Development,[11] both merged in 2001 into the Sustainable Development Commission.

Such broad institutional and policy reconfigurations however obfuscate the formidable policy and legal problems the sustainability challenge poses to governments. Absolute ecological limits to human activity, the existence of irreversible environmental impacts and concomitant sense of policy urgency, and the systemic problem sources located in patterns of production and consumption are some of the challenges that demand innovations in policy instruments and management institutions.[12] Creation of new environmental agencies, issuance of well-meaning policies and other reform gestures alone will unlikely achieve significant changes in controlling the environmental consequences of development choices. The sustainable development agenda challenges public law systems premised on administrative agency monopoly of decision powers and whose functionality and legitimacy are traditionally grounded in jurisdictional and procedural rules.[13] A regulatory agency conceived in the Weberian schema is controlled by *inputs* – by legislative directions, which are to be applied strictly and faithfully.[14] However, what government activity in pursuit of sustainable development presupposes

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5 S. 4(1).

6 T. Jewell and J. Steele, 'UK Regulatory Reform and the Pursuit of Sustainable Development: The Environment Act 1995' in (1996) 8 *Journal of Environmental Law* 283.

7 Regional Development Agencies Act 1998, s. 4(1)(e).

8 Local Government Act 2000, s. 4(1).

9 Department of the Environment, *Sustainable Development: The UK Strategy* (HMSO, 1994); Department for the Environment, Transport and the Regions (DETR), *A Better Quality of Life: A Strategy for Sustainable Development for the United Kingdom*, Cm 4345 (DETR, May 1999).

10 It issued ad hoc reports into specific topics and annual reports: see e.g. UK Round Table on Sustainable Development, *Fourth Annual Report* (HMSO, March 1999).

11 British Government Panel on Sustainable Development homepage: http://www.open.gov.uk/panel-sd/homesd.htm (visited 19 July 2000).

12 See especially S. Dovers, 'Sustainability: Demands on Policy' in (1997) 16 *Journal of Public Policy* 303; S. Dovers and W. Gullett, 'Policy Choice for Sustainability: Marketization, Law and Institutions' in *Environmental Justice and Market Mechanisms: Key Challenges for Environmental Law and Policy* (K. Bosselmann and B.J. Richardson (eds.)) (Kluwer Law International, 1999) 110.

13 T.G. Ison, 'The Intrusion of Private Law in Public Administration' in (1976) 17 *Les Cahiers de Droit* 798.

14 As outlined by J. Cohen, 'Max Weber and the Dynamics of Rationalized Domination' in (1972) 14 *Telos* 65.

is control primarily by *outputs*: an activity is 'adequate' not if it conforms to statutory rules and procedures, but primarily if it produces certain (environmental) results. Certainly, intense demands for public participation and information rights have been a ubiquitous feature of recent environmental policy reforms,[15] but the participation agenda alone is an insufficient basis for sustainability. Judicial review and public law remedies may be useful for protecting public consultation rights and restraining administrative behaviour, but they are of considerably less use in *inducing* improved performance by authorities and regulatees. An important ingredient needed to help transform economics towards sustainability is new policy instruments that provide financial incentives for businesses and other organizations to seek continuous improvement in environmental performance and to invest in appropriate technologies.

Reforms to promote sustainability in the UK and abroad have increasingly emphasized the need for more flexible, innovative policy tools, especially economic incentive mechanisms, to encourage companies to reduce resource consumption and pollution emission in a cost effective manner. Interest in economic instruments is linked to broader concerns about the efficacy of traditional regulatory techniques. Increasingly environmental regulation, such as strict pollution licensing and planning controls, has become a target of free market criticism and reform.[16] Environmental law in Western countries emerged from the traditional form of governance of 'command and control' regulations. The 'juridification' of environmental policy during the 1970s and 1980s created a plethora of statutes and institutions, but these were somewhat complex, contradictory and often overwhelming for regulators and regulated alike.[17] The alternative, a market-based approach to environmental policy, has seemed for many a natural corollary to the influential economic deregulation agenda.[18] In many states, various blue ribbon commissions and other expert studies have advocated introduction or extension of economic instruments as a means of environmental policy achievement.[19] This has

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[15] See J.G. Tabner, N. Brunton and L. Mather, 'The Development of Public Participation in Environmental Protection and Planning Law in Australia' in (1996) 13(4) *Environmental and Planning Law Journal* 260; N. Gunningham and A. Cornwall, 'Legislating the Right to Know' in (1994) 11 *Environmental and Planning Law Journal* 274.

[16] See especially T.L. Anderson and D.R. Leal, *Free Market Environmentalism* (Pacific Research Institute for Public Policy, 1991).

[17] K. Bosselmann and B.J. Richardson, 'Introduction: New Challenges for Environmental Law and Policy' in *Environmental Justice and Market Mechanisms, supra* note 12, at pp. 1–4.

[18] See R.B. Stewart, 'Models for Environmental Regulation: Central Planning Versus Market-Based Approaches' in (1992) 19(3) *Boston College Environmental Affairs Law Review* 547; B.A. Ackerman and R.B. Stewart, 'Reforming Environmental Law' in (1991) 15 *Harvard Environmental Law Review* 149.

[19] See, e.g. P. Kågeson, *Economic Instruments in European Environmental* (European Environmental Bureau, 1993); United States Environmental Protection Agency (EPA), *Economic Incentives. Options for Environmental Protection* (EPA, 1991); Norwegian Green Tax Commission, *Policies for a Better Environment and High Employment* (Ministry of Finance and Customs, 1996).

been matched and fuelled by a burgeoning academic debate regarding new legal techniques for environmental control, focusing on use of market incentives and industry self-regulation.[20] The European Union (EU) has emerged as an enthusiastic proponent of economic instruments. Its 1993-2000 *Fifth Environmental Action Programme* called for a 'broadening of the range of instruments' as a key priority,[21] and in 1997 the European Commission published a *Communication on Environmental Taxes and Charges in the Internal Market*,[22] which considered such measures in the context of single market policy questions arising under the EU Treaty. Most recently, in March 2000, the Commission released a Green Paper canvassing the scope for a greenhouse gas emissions trading market system for EU members.[23] In addition, outside of the EU, experience with economic instruments in Australia, New Zealand and the United States has helped enhance understanding about the potentials of this approach for UK and other EU government reformers.[24]

B. Economic Instruments: Concepts and Issues

Economic instruments have been defined broadly as 'instruments that affect costs and benefits of alternative actions open to economic agents, with the effect of influencing behaviour in a way favourable to the environment'.[25] Among policy

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[20] See, e.g. B.A. Ackerman and R.B. Stewart, 'Reforming Environmental Law: The Democratic Case for Market Incentives' in (1988) 13 *Columbia Journal of Environmental Law* 171; F.E. Anderson, et al., *Environmental Improvement Through Economic Incentives* (John Hopkins University Press, 1977); S. Breyer, 'Analyzing Regulatory Failure: Mismatches, Less Restrictive Approaches and Reform' in (1979) 92 *Harvard Law Review* 547.

[21] European Commission, Fifth Environmental Action Programme, *Towards Sustainability: A European Community Programme of Policy and Action in Relation to the Environment and Sustainable Development* (Office for Official Publications of the European Communities, 1992) at p. 101.

[22] COM(97), 9 February 1997.

[23] European Commission, *Green Paper on Greenhouse Gas Emissions Trading within the European Union*, COM(2000)87, 8 March 2000. The Green Paper builds upon a number of elements that have already been covered in previous Commission Communications: see, e.g. European Commission Communication, *Climate Change Towards an EU Post-Kyoto Strategy*, COM(1998) 353 final, 3 June 1998; European Commission Communication, *Preparing for Implementation of the Kyoto Protocol*, COM(1999) 230 final, 19 May 1999.

[24] For international experience and lessons, see, e.g. B.J. Richardson, 'Economic Instruments and Sustainable Management in New Zealand' in (1998) 10(1) *Journal of Environmental Law* 21; B. Richardson, 'Economic Instruments in Australian Pollution Control Law' in *Pollution Law in Australia* (G. Bates and Z. Lipman (eds.)) (LexisNexis Butterworths, 2002) at pp. 49–99; P.L. Joskow and R. Schmalensee, 'The Political Economy of Market-based Environmental Policy: The U.S. Acid Rain Program' in (1998) 41(1) *Journal of Law and Economics* 37.

[25] OECD, *Environmental Policy: How to Apply Economic Instruments* (OECD, 1991) 10.

tools, economic instruments come closest to offering a pathway to operationalize the principle of *internalization of environmental costs* – one of the foundation principles of sustainable development. The principle addresses the problems of environmental externalities of market transactions and the degradation of public goods that are not priced or under-priced in markets.[26] The principle requires that economic decision-making 'internalize' such values and costs. Variations on the principle that have been a familiar part of environmental management nomenclature are the 'polluter pays' principle and the 'user pays' principle.[27]

The two main economic instruments are price-based measures, such as taxes to persuade polluters or resource users to reduce their discharges or resource consumption respectively; and marketable rights-based measures, establishing tradable rights to use natural resources or to emit pollutants within a pre-determined level. Since the early 1970s, the Organization for Economic Cooperation and Development (OECD) has been an active proponent of economic instruments, assisting Member States in analyzing the circumstances under which such instruments work best and identifying their modalities of operation.[28] But rather than being concerned with environmental problems *per se*, the OECD, through its guiding 'polluter pays principle', has been motivated primarily by the desire to remove hidden subsidies that give unfair international competitive advantages to polluting industries.[29]

However, whilst economic instruments obviously are market-based in their methodology, they cannot be crudely equated with market liberalism as they are directed to addressing the environmental effects of un-coordinated free markets.[30] Indeed, economic instruments can entail considerable re-regulation anathema to free market philosophy. Although economic instruments such as taxes and tradable permits are understood as 'market' mechanisms, they are nested within administrative processes that crucially define their scope and operation. Both taxes and

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[26] See M. Massarrat, 'Sustainability Through Cost Internalisation' in (1997) 22(1) *Ecological Economics* 29.

[27] OECD, *The Polluter Pays Principle: Definition, Analysis, Implementation* (OECD, 1975). The polluter pays principle appears in the environmental policy requirements of Article 174 of the EU Treaty, OJ C340/3 (1997).

[28] Among the OECD studies, see *Environment and Economics* (OCED, 1985); *Climate Change: Designing a Practical Tax System*, (OECD, 1992); *Managing the Environment: The Role of Economic Instruments* (OECD, 1994); *Incentive Measures to Promote the Conservation and the Sustainable Use of Biodiversity: Framework for Case Studies* (OECD, 1997).

[29] OECD, *Guiding Principles Concerning International Economic Aspects of Environmental Policies, Recommendation* C(72)128; 26 May 1972, (1972) 11 ILM 1172. See further S.E. Gaines, 'The Polluter-Pays-Principle: From Economic Policy to Environmental Ethos' in (1991) 26 *Texas International Law Journal* 463 at p. 469.

[30] On market liberalism, and its environmental consequences, see C. James, C. Jones and A. Norton (eds.), *A Defence of Economic Rationalism* (Paul and Co. Publishers, 1994); D. Boaz and E.H. Crane (eds.), *Market Liberalism: A Paradigm for the 21st Century* (Cato Institute, 1993); R.L. Stroup, 'Privatizing Public Lands: Market Solutions to Economic and Environmental Problems' in (1998) 19 *Public Land and Resources Law Review* 79.

trading schemes pose headaches for government that must determine monitoring, enforcement and other regulatory controls for their effective implementation.[31]

Rather than being a manifestation of market liberalism, economic instruments should be understood as part of the 'ecological modernization' policy oeuvre, one of the most significant environmental policy developments in Western states in the last decade. Ecological modernization doctrine was pioneered by a number of German scholars in the 1980s interested in redesigning environmental policy to address the structural features of capitalism.[32] But rather than renouncing capitalism or perceiving a fundamental schism between environmental care and economic development, ecological modernization theory posits that through a framework of industrial modernity, environmental protection and economic development can be mutually supportive. Environmental care, it is asserted, can facilitate efficiency, improve productivity, and assist long-term maintenance of the resource base for capital accumulation.[33] Consequently, the ethical and political dilemmas of industrialization are presented by ecological modernists as largely technical and managerial challenges. Introduction of a broader array of policy instruments, especially information and incentive tools, is seen as crucial for achieving this synergy between environmental and economic goals.[34]

Yet, behind the rhetoric, it is clear that governments have often faced significant industry anxieties regarding the cost implications of economic instruments, and accordingly uptake of new instruments has sometimes been slower than ecological modernization theory would predict.[35] Various governments, such as in Australia, the United States and in Britain, have experienced political setbacks when attempting to introduce environmental taxes, defying the consensus assumption of ecological modernization.[36] Economic instruments magnify the costs of environmental policy whereas costs under command regulation are less transparent and hence less readily objectionable. Opposition has also come from the social welfare

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[31] See OECD, *Lessons from Existing Trading Systems for International Greenhouse Gas Emission Trading* (OECD, 1998), at pp. 40, 44; A.M. Polinsky and S. Shavell, 'Pigouvian Taxation with Administrative Costs' in (1982) 19(3) *Journal of Public Economics* 385.

[32] See especially J. Huber, *Die verlorene Uncshuld der Ökologie* (Fischer Verlag, 1982); M. Jänicke, *Staatsversagen. Die Ohnmacht der Politik in der Industriegesellschaft* (Piper, 1986).

[33] On the potential symbiosis of environmental and economic concerns, see M.E. Porter and V. der Linde, 'Green and Competitive: Ending the Stalemate' in (1995) 73(5) *Harvard Business Review* 120.

[34] See, e.g., M. Andersen, *Governance by Green Taxes* (Manchester University Press, 1994); A.P.J. Mol, 'Ecological Modernisation and Institutional Reflexivity: Environmental Reform in the Late Modern Age' in (1996) 5(2) *Environmental Politics* 302 at pp. 306–309.

[35] C. Larrue, 'The Political (Un)feasibility of Environmental Economic Instruments' in *Environmental Policy in Search of New Instruments* (B. Dente (ed.)) (Kluwer Law, 1995), 37 at pp. 45–49.

[36] See, e.g., M. Reitan, 'Ecological Modernisation and "Realpolitik": Ideas, Interests and Institutions' in (1998) 17(2) *Environmental Politics* 1 at p. 18 (discussing Norway's difficulties in introducing a carbon tax); P. Christoff, 'Market-based Instruments: The Australian Experience' in *Markets, the State and the Environment: Towards Integration* (R. Eckersley (ed.)) (Macmillan, 1995) 158.

lobby preoccupied by socially regressive 'user pays' environmental taxes[37] or pollution 'hotspots' arising from emission trading schemes.[38] The environmental movement has traditionally been suspicious of economic instruments because of their association with degrading market processes.[39] Technical problems of instrument design also appear to have slowed the uptake of economic instruments; Grabosky and Braithwaite mention methodological weaknesses such as 'the logistic impossibility of auditing honest measurement of emissions on which charges would be based'.[40] The correct setting of pollution or resource charges can be particularly complex, requiring identification of users and their level of environmental impact.[41]

During the 1990s, several factors emerged that created a climate more receptive to the uptake of economic instruments in environmental policy. In the last decade governments have become open to market-based instruments partly because of improved information and understanding generated by a plethora of government inquiries, academic studies and pilot projects.[42] Governments have also warmed to economic instruments as a consequence of moves to commercialize state services and assets in the field of water and energy supply.[43] Ongoing concerns with full cost-recovery in service and supply have meant that policy-makers could not easily ignore the potential role of the market in promoting the efficient allocation of resources. Greater familiarity with their environmental effectiveness and cost implications has also helped reduce the uncertainties and anxieties of industry and environmental organizations. Finally, the acknowledgement of the role of economic instruments in international environmental law and policy enhanced the legitimacy of proposed national reforms.[44]

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[37] See J. Disney, 'Economic and Social Consequences of the GST – Goods and Services Tax – in the Fightback Package' in (1992) 41 *Growth* 41.

[38] See N. Schuyler, 'Clean Air, Inc. Do Market-based Emissions Controls Mean the Poor Breathe the Dirtiest Air?' in (1995) 39(5) *California Lawyer* 39.

[39] For example, Schumacher sermonized that free markets 'take the sacredness out of life, because there can be nothing sacred in something that has a price': E.F. Schumacher, *Small is Beautiful: Economics as if People Mattered* (Harper and Row, 1973) at p. 45.

[40] P. Grabosky and J. Braithwaite, *Of Manners Gentle: Enforcement Strategies of Australian Business Regulatory Agencies* (Oxford University Press, 1986) at p. 37.

[41] See generally OECD, *Implementation Strategies for Environmental Taxes* (OECD, 1996).

[42] Among the proliferation of studies, see, e.g. Australia, Department of Finance, *In Pursuit of Australia's Environment and Resource Goals: The Potential Role of Economic Instruments* (Australian Government Publishing Service, 1994); Government of Canada, *Economic Instruments for Environmental Protection: Discussion Paper* (Government of Canada, 1992); Sweden, Ministry of the Environment and Natural Resources, *The Swedish Experience – Taxes and Charges in Environmental Policy* (Ministry of the Environment and Natural Resources, 1994).

[43] The literature is massive, but see, e.g. C.G. Veljanovski, *Selling the State: Privatisation in Britain* (Weidenfeld and Nicolson, 1987); P.M. Jackson and C.M. Price (eds.), *Privatisation and Regulation: A Review of the Issues* (Longman, 1994); M. Bishop, J. Kay and C. Mayer (eds.), *Privatization and Economic Performance* (Oxford University Press, 1994).

[44] See, e.g. N. Robinson (ed.), *Agenda 21: Earth's Action Plan* (Oceania Publications, 1992) at p. 127; UNCED's *Rio Declaration on Environment and Development*, in (1992) 31 ILM 874,

Academic and policy arguments for economic instruments have typically been presented in terms of their advantages over command and control (CAC) regulation.[45] Command methods of environmental regulation have been condemned as administratively complex and costly, inflexible and producing insufficient incentives for business to go beyond the regulatory floor.[46] By contrast, by decentralizing resource allocation and pricing decisions to the market, economic instruments promise greater consumer and producer flexibility[47] and may promote the economically efficient allocation of scarce resources.[48] Although some CAC regimes have incentive effects, such as administrative pricing, they are not market-based as governments effectively control resource allocation. But the most prevalent argument made for economic instruments is cost effectiveness.[49] In theory, economic instruments allow society to achieve the same environmental outcome at a lower cost or achieve superior environmental improvements at the same cost as CAC regulation. The methodological pluralism of economic instruments allows industries to make cost savings by tailoring their own means of reducing pollution. Command regulations, by contrast, tend to specify strict limits on certain inputs (e.g. use of fuels) and adoption of particular control technologies at facilities (e.g. waste treatment or emission filters).[50]

It should be noted nonetheless that environmental regulation is rarely a dichotomous choice between command and market-based instruments. Scholars and policy-makers increasingly acknowledge the value of using integrated and hybrid approaches enlisting a package of command and market-based policy tools.[51]

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Principle 16; 1997 Kyoto Protocol to the Framework Convention on Climate Change, in (1998) 37 ILM 22.

[45] See R.B. Stewart, 'Economic Incentives for Environmental Protection: Opportunities and Obstacles' *Environmental Law, the Economy and Sustainable Development, supra* note 3, at p. 171.

[46] M.B. Hopper, 'Trust But Verify: Innovation in Compliance Monitoring as a Response to the Privatization of Utilities in Developed Nations' in (1996) 48 *Administrative Law Review* 593 at pp. 610–611.

[47] OECD, *supra* note 25, at p. 14

[48] See generally G. Bándi, 'Financial Instruments in Environmental Protection' in *European Environmental Law: A Comparative Perspective* (G. Winter (ed.)) (Dartmouth, 1996) 201.

[49] See N.O. Keohane, R.L. Revesz and R.N. Stavins, 'The Choice of Regulatory Instruments in Environmental Policy' in (1998) 22(2) *Harvard Environmental Law Review* 313; J. van Dunné (ed.), *New Instruments for a Realistic Environmental Policy* (Erasmus University, 1993).

[50] See R. Hahn and R. Stavins, 'Incentive-Based Environmental Regulation: A New Era From an Old Idea?' in (1991) 18(1) *Ecology Law Quarterly* 1; R.B. Stewart, 'Models for Environmental Regulation: Central Planning Versus Market-Based Approaches' in (1992) 19 *Boston College Environmental Affairs Law Review* 547.

[51] See, e.g., P. Kinradem, 'Towards Ecologically Sustainable Development: The Role and Shortcomings of Markets' in *Markets, the State and the Environment, supra* note 36, 86 at pp. 86–87.

The disjuncture between markets and regulation seems misplaced since market mechanisms of all strands generally depend on legal regulation for their effective operation.[52] In most instances, implementation of economic instruments requires re-regulation to ensure the 'proper and efficient functioning of market forces'.[53] In virtually all applications of economic instruments there is a need for strong State involvement, such as for the collection of environmental charges or rules structuring emissions quota trading. Thus, there is growing appreciation among scholars and reformers of the value of using a diversity of policy tools for environmental protection. In sum, Gunningham and Grabosky suggest 'single instrument ... approaches are misguided ... [and] that in the large majority of circumstances (though certainly not all), a mix of instruments is required, tailored to specific policy goals'.[54]

C. Economic Instruments in UK Environmental Law Reform

Against the backdrop of the aforementioned reform stimuli, the UK government, during the last decade, has begun to incorporate economic instruments into its environmental law systems. As early as 1992, the government boldly announced, 'in future there will be a general presumption in favour of economic instruments'.[55] In 1996, the Government Panel on Sustainable Development advocated wider use of economic instruments, to which the Department of Environment responded, '[t]he Government would like to see continued and faster progress, but there is a need to assess the complex technical and administrative or enforcement issues involved on a case-by-case basis'.[56] The commitment to economic instruments was reaffirmed in the 1999 *Sustainable Development Strategy* (SDS), which in Chapter 5 canvassed a range of new policy tools such as taxes and tradable permits to reinvigorate UK environmental governance. The SDS stated that:

> The Government will explore the scope for using economic instruments, such as taxes and charges, to deliver more sustainable development. Such measures can promote change, innovation and efficiency, and higher environmental standards. They are a way to put the 'polluter pays' principle into practice,

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[52] C.R. Sunstein, 'Administrative Substance' in (1991) *Duke Law Journal* 607 at p. 608.

[53] C. Redgwell, 'Privatization and Environmental Regulation: A United Kingdom Perspective' *Environmental Justice and Market Mechanisms supra* note 12, 257 at p. 259.

[54] N. Gunningham and P. Grabosky, *Smart Regulation: Designing Environmental Policy* (Oxford University Press, 1998) at pp. 14–15.

[55] UK, *This Common Inheritance. The Second Year Report*, Cmnd 2086 (Stationery Office, 1992) para. 3.46.

[56] DETR, *Government Response to the Second Annual Report of The Government's Panel On Sustainable Development March 1996* (DETR, 1996) para. 17.

although care is needed to consider the impact on competitiveness and the social consequences.[57]

Government exploration of economic instruments has been articulated through various studies and reports, notably the 1998 Lord Marshall report which focused on the role of taxation and tradable permit mechanisms.[58] These explorations have also been shaped by European developments, notably, the EU's *Fifth Environmental Action Programme on the Environment* (1993-2000). Entitled 'Towards Sustainability', it focused on the concept of 'shared responsibility' in which environmental management was seen as a multi-party responsibility involving 'the use of an extended, and integrated range of instruments'.[59]

The arsenal of UK environmental law instruments has broadened significantly in recent years, with administrative charges for pollution permits and waste management being the most commonly applied economic instrument. There are two generic approaches to designing environmental taxes and charges where environmental goals are primary considerations: setting the tax at a level to achieve desired environmental quality objectives (e.g. air quality), or basing taxes on valuation of external environmental costs and benefits.[60] The problem with the latter approach is that it is probably impossible to fully capture all the externalities, notably biodiversity values not used in ordinary production sequences. Less ambitiously, charges are also availed for mere cost recovery of public management services, such as for the issuance and monitoring of pollution licences. Economic theory posits that charges will impose lower costs on developers to achieve a given level of pollution reduction than will conventional regulations directed to achieve the same goal.[61] This is because charges can take advantage of differences in the marginal cost of abatement among companies to lower the aggregate cost of pollution control.[62] Charges also give polluters an ongoing incentive to seek more efficient ways through, for example, technological innovations or recycling, to reduce emissions and avoid higher charges.[63]

Environmental charges have been widely applied within the EU, with the

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[57] DETR, *A Better Quality of Life: A Strategy for Sustainable Development for the UK* (DETR, 1999) para. 5.7.

[58] Government Task Force on the Industrial Use of Energy (chair Lord C. Marshall), *Economic Instruments and the Business Use of Energy* (HMSO, 1998); for an earlier salient report, see UK, Department of Environment Protection (DEP), *Making Markets Work for the Environment* (DEP, 1993).

[59] European Commission, *supra* note 21, at p. 25.

[60] The general rationale for using taxation mechanisms in environmental policy is outlined in OECD, *Taxation and the Environment* (OECD, 1993).

[61] R. Repetto, et al., *Wasting Assets. National Resources in the National Income Accounts* (World Resources Institute, 1989) at pp. 7–8.

[62] Ibid., at p. 7.

[63] R. Stavins and B. Whitehead, 'Dealing with Pollution: Market-based Incentives for Environmental Protection' in (1992) 34(7) *Environment* 7 at p. 30.

Benelux and Scandinavian countries having the most extensive examples.[64] During the 1990s, UK governments began to follow suit, beginning with the imposition of VAT on domestic energy[65] and higher road fuel duties, both measures that complemented environmental policy goals.[66] In 1999, reforms were introduced to company car taxation to encourage reduced mileage.[67] In relation to the industrial and commercial sector, a landfill tax and a climate change levy were introduced in 1996 and 2001 respectively, reforms that are discussed below. In November 1997, the Department of Environment released a consultation paper canvassing options for introduction of economic instruments to control water pollution, although nothing material has since eventuated.[68] Liability instruments can also be used to convey the costs of environmental use. In this respect, in April 2000, new provisions came into effect under the Environment Act 1995 providing for the imposition of cleanup liability on owners and occupiers of contaminated land, a reform that will help ensure the costs of environmental damage are factored into property prices.[69]

The landfill tax is probably the UK's best-known environmental charge. Introduced in 1996 through the Finance Act and the Landfill Tax Regulations, the landfill tax is 'to ensure that landfill waste disposal is properly priced so as to reflect its environmental cost' and so ultimately reduce waste generation.[70] Disposal of defined 'controlled waste'[71] is liable to tax if it is disposed in a landfill, currently at a rate of 10 GBP per tonne, and rising by a 1 GBP a tonne per annum until 2004. The tax is collected through the operators of licensed landfill sites, mostly run by local authorities. Waste regulation in England and Wales operates under the auspices of the Environment Agency. The county councils are Waste Disposal Authorities (WDAs) possessed of a statutory duty to prepare disposal plans. The district or borough councils are Waste Collection Authorities (WCAs) with

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[64] Among the growing literature, see European Commission, *Tax Provisions with a Potential Impact on Environmental Protection* (European Commission, Sept. 1996); European Commission, *Evaluation of Environmental Effects of Environmental Taxes* (European Commission, March 1999); P. Ekins, 'European Environmental Taxes and Charges: Recent Experience, Issues and Trends' in (1999) 31 *Ecological Economics* 39.

[65] VAT was imposed on domestic fuel/power at 8 per cent from April 1994 and then at the full rate of 17 per cent from April 1995.

[66] See S. Virley, 'The Effect of Fuel Price Increases on Road Transport CO_2 Emissions' in (1993) 1 *Transport Policy* 43.

[67] See UK, Inland Revenue, 'Protecting the Environment: Reform of Company Car Taxation' (Inland Revenue, 21 March 2000).

[68] DETR, *Economic Instruments for Water Pollution* (DETR, 1997).

[69] O. McIntyre, 'The UK Environment Act 1995, Section 57: A Contaminated Land Regime At Last!' in (1996) 4 *Environmental Liability* 67.

[70] HM Customs and Excise, *Review of the Landfill Tax: Report* (HM Customs and Excise, 1998) para. 3.1.

[71] As defined by s. 75 of the Environmental Protection Act 1990 as amended by the Environment Act 1995.

responsibility to collect and transport municipal solid waste.[72] In theory, therefore, the landfill tax establishes a core price for disposal, which, if properly enforced and policed, compels generators and transporters to find their economically most efficient disposal outlet.[73] The Landfill Tax Credit Scheme (LTCS) enables landfill operators to divert up to 20 per cent of their landfill tax liabilities into approved environmental enhancement projects.[74] But since criticism has been levelled against the scheme because landfill operators cannot generally benefit themselves from such projects,[75] the government is contemplating replacing the LTCS with a public spending scheme to channel financial resources to government priorities on sustainable waste management.[76]

Whilst the tax has had some positive effect of making companies more aware of their waste generation,[77] it appears to have had little effect on the domestic household sector since it is not feasible for local councils to directly charge individual families for their waste generation. For the commercial sector, businesses may simply pay for waste disposal as part of their property rent or according to the size of containers (but not necessarily weighed), again failing to transmit strong signals regarding waste minimization. Consequently, the landfill tax has placed a heavy financial burden on local councils that are reported to lack the flexibility and means to promote recycling and investment in waste reduction technologies in the economy more widely.[78] Further, there have been reports of increased 'fly-tipping' and illegal waste disposal by businesses to avoid charges.[79] Clearly, the landfill tax experience highlights the importance of introducing a financial instrument in *combination* with other regulatory reforms. Besides obvious reforms such as reviewing currently exempt activities from the tax, other possible ancillary measures include stimulating the market for recycled materials by obliging manufacturers of materials to incorporate defined percentages from recyclables, as well as introducing a new tax on other environmentally problematic forms of disposal, such as incineration. So far the government has responded to the chorus of complaint with the issuance in

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[72] Unitary authorities, combining the roles of county and district councils, are both WDAs and WCAs.

[73] See A. Read and P. Phillips, 'Tax Aims to Reduce U.K. Landfill Dependence' in (1997) 40(7) *World Wastes* 7.

[74] Categories of approved projects are listed in reg. 33(2) of the Landfill Tax Regulations.

[75] Anonymous 'Landfill Tax and the Pitfalls of Privatised Public Spending' in (1999) (February) 289 *ENDS Report* 17.

[76] See Treasury Ministry, P. Boateng, *Hansard,* (30 Oct. 2001): http://www.publications.parliament.uk/pa/cm200102/cmhansrd/cm011030/text/11030w17.htm#11030w17.html_sbhd3 (visited 20 November 2001).

[77] See ECOTEC Research and Consulting Ltd, *Effectiveness of the Landfill Tax in the UK: Barriers to Increased Effectiveness and Options for the Future*, a final report for Friends of the Earth, (Friends of the Earth, 1997).

[78] J.R. Morris, P.S. Phillips and A.D. Read, 'The UK Landfill Tax: Financial Implications for Local Authorities' in (2000) (July-September) *Public Money and Management* 51.

[79] Anonymous, 'Landfill Tax? Driving it Underground?' in (1998) 2 *ICEM Global* 1.

November 2001 of proposals for a new 140 million GBP fund to enable local councils to enhance waste minimization and recycling.[80]

The landfill tax experience has not deterred UK authorities from attempting to 'send the right signals' in relation to greenhouse gas emissions by introducing a new Climate Change Levy (CCL). Although the UK objected to EU proposals in the early 1990s for a European carbon tax[81] fearing loss of control over national taxation policy,[82] in April 2001, it introduced its own tax as a means of enabling the UK to achieve its emission reduction targets under the Kyoto Protocol of 1997.[83] The CCL is charged on energy supplied to industrial and commercial users, as well as public authorities, although levy rates vary depending on the energy source.[84] The levy does not generally apply to the transport sector (i.e., petrol) or to renewable energies used by any sector. On the other hand, the inclusion of nuclear power in the scope of the CCL seems problematic given that it is not a fossil fuel. Its inclusion was probably due to a wish to prevent windfall gains by the nuclear industry. The CCL was advanced on a roughly revenue neutral basis to be offset by a 0.3 per cent reduction in affected businesses' national insurance contributions. The scheme also includes the sweetener of an 80 per cent discount in the levy rates for those energy intensive industries that enter into an agreement (Climate Change Agreement (CCA)) to meet targets for improving energy efficiency or reducing emissions. The CCL's financial impact is also assuaged by the government-funded enhanced capital allowances (ECAs) scheme, whereby investment in specific energy efficient products (e.g. pipe-work insulation and thermal screens) enables companies to reclaim 100 per cent of the capital allowance in the first year.[85] Nonetheless, the levy has received a hostile reception from some industry groups, with the Engineering Employers' Federation[86] arguing that some sectors have been disproportionately hurt (e.g. energy intensive industries employing few staff members) and that more money should be redirected into projects to allow affected businesses to improve energy

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[80] See Department of the Environment, Food and Rural Affairs (DEFRA), 'Innovation and Partnership Key for New £140M Recycling Fund', http://www.defra.gov.uk/news/2001/011121b.htm (visited 5 December 2001).

[81] For a good analysis of this and other European environmental tax issues, see G.I. Timm, *Die wissenschaftliche Beratung der Umweltpolitik: Der Rat von Sachverständigen für Umweltfragen* (Deutscher Universitäts Verlag, 1996).

[82] D. Maddison and D. Pearce, 'The UK and Global Warming Policy' *UK Environmental Policy in the 1990s, supra* note 3, 123 at pp. 138–139.

[83] DETR, *UK Climate Change Programme: Consultation Paper* (DETR, 1998). S.A. Price, 'Environmental Taxation: The U.K.'s Proposed Climate Change Levy' in (1999) 12 *Opinion* 335.

[84] For example: liquid petroleum gas (LPG) – 0.07p/kWh; gas, coal, lignite and coke – 0.15p/kWh; electricity – 0.43p/kWh.

[85] A list of approved products can be found on the ECA website: http://www.eca.gov.uk.

[86] Engineering Employers' Federation, *The Climate Change Levy – Its Impact and Proposals for Change* (EEF, 2001).

efficiency.[87] Such complaints reflect the unwillingness of industry to accept its contribution to environmental problems, and ignores the various concessions the government has offered through the CCL package. Information from the Department of Trade and Industry shows that the levy has added 0.9 per cent to the monthly input prices index for materials and fuels – hardly a staggering impact, and one offset by recycling levies to industry through, *inter alia*, reduced national insurance contributions, as discussed below.[88] Moreover, industry has another lifeline – in the form of the opportunity to participate in the planned emissions trading scheme.

The introduction in 2002 of a national market for trading in greenhouse gas emission entitlements marks the first use of marketable pollution permits in the UK, although there has been a template for their introduction by regulation under the Environmental Protection Act 1990 and the Pollution Prevention and Control Act 1999. The government has also recently been considering introduction of a tradable landfill permits scheme.[89] In December 1996, the UK government released a paper that explored regulation of sulphur dioxide emissions through tradable emission permits,[90] but the government later backed away from this option because of perceived technical barriers to implementation.[91] At the EU level, there is some experience with transferable allowances in relation to production/consumption quotas for ozone depleting substances regulated under the Montreal Protocol[92] and, as noted earlier, a trading mechanism in relation to greenhouse gas emissions was outlined in the European Commission's Green Paper of March 2000.[93] The Paper proposed the establishment of a limited, Union-wide, emissions trading scheme in carbon among large fixed point sources by 2005, to enable 'learning-by-doing' prior to commencement of the expected global trading regime. The UK's Lord Marshall Report highlighted the difficulties of implementing a tradable permit scheme (e.g. determining means of permit allocation and trading rules) and considerable work

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[87] B. Church, 'Climate Change Levy – Hot Air or Cold Comfort?' in (2001) 29(12) *Energy Policy* at 947–948; N. Wilks, 'Clouds over the Climate Levy' in (2000) 14(18) *Professional Engineering* at pp. 20–23.

[88] Anonymous, 'Climate Levy Price Rise Less Than Feared' in (2001) (24 May) *Supply Management* 8.

[89] Department for Environment, Food and Rural Affairs (DEFRA), Tradable Landfill Permits Consultation Paper (DEFRA, 2001).

[90] DETR, *Reducing National Emissions of Sulphur Dioxide: A Strategy for the United Kingdom* (DETR, 1996).

[91] DETR, *Government Response to the Fourth Annual Report of The Government's Panel On Sustainable Development February 1998* (DETR, 1998) para. 56.

[92] Council Regulations No. 3952/92 and No. 3093/94.

[93] European Commission, *supra* note 23. The recommendations of the Green Paper have been carried forward into a proposed directive: Proposal for a Directive of the European Parliament and of the Council establishing a scheme for greenhouse gas emission allowance trading within the Community, COM (2001) 581 final.

remains to translate statutory templates to use economic tools into operational applications.[94]

Participation in the new UK greenhouse gas emissions scheme, commencing in April 2002, is voluntary, although once companies sign-up, the regime is binding and the new Emissions Trading Authority will regulate trade in emissions. The policy aim is to allow UK business and other organizations to get early experience of emissions trading in anticipation of an eventual EU or broader global emissions market under the auspices of the Kyoto Protocol. Whereas taxes set a 'price' on environmental usage and rely on markets to effect corresponding behavioural changes towards the desired environmental standard, tradable permits are based on government determining the environmental standard in the form of an emissions or resource 'cap' and relying on the market to price and allocate the tradable entitlements.[95] The creation of exclusive and transferable environmental pollution rights in theory provides firms with an incentive to use environmental entitlements in a manner that maximizes their benefits.[96] As an additional incentive for companies to participate in its new greenhouse gas emissions trading scheme, the UK government is offering firms some £215 million of financial subsidies.

Under the UK scheme, companies assume targets requiring them to reduce greenhouse gas emissions to a capped level, with the option to sell excess allowances or emit above the cap but buy allowances from other firms.[97] The scheme is open to most businesses and other organizations in the UK responsible for greenhouse gas emissions, but generally restricts emission sources already covered by a CCA: Participants have the option of trading in just carbon dioxide (CO^2) emissions, or all of the six greenhouse gases covered by the Kyoto Protocol. Participating firms must submit a list of emission sources for entry into the scheme, and emission targets are set though an auction process. The auctioneer sets a price in tonnes of CO^2 equivalent (tCO2e), and firms can elect to make a bid at that price in terms of a tCO2e emission reduction to be achieved over five years. Firms that fail to meet their emissions target at the end of the compliance period will be subject to a three-month reconciliation period, failing which they will be subject to loss of financial incentives

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[94] See, e.g. the findings of the Australian National Commission of Audit, *Report to the Commonwealth Government* (Australian Government Publishing Service, 1996) at p. 76.

[95] The literature on tradable emission and resource use rights is extensive: see, e.g. T.H. Tietenberg, *Emissions Trading: An Exercise in Reforming Pollution Policy* (Resources for the Future, 1985); S. Beder, 'Charging the Earth: The Promotion of Price-based Measures for Pollution Control' in (1996) 16(2) *Ecological Economics* 51; C.L. Kling, 'Environmental Benefits from Marketable Discharge Permits or an Ecological vs. Economical Perspective on Marketable Permits' in (1997) 11(1) *Ecological Economics* 57.

[96] D.A. Malueg, 'Emission Credit Trading and the Incentive to Adopt New Pollution Abatement Technology' in (1989) 16 *Journal of Environmental Economics and Management* 52.

[97] See DEFRA, *The UK's Third National Communication under the United Nations Framework Convention on Climate Change* (DEFRA, 2001); DEFRA, *A Summary Guide to the UK Emissions Trading Scheme* (DEFRA, 2001).

promised by the government and ancillary financial penalties. The government also intends to publish a blacklist of non-compliant firms.

A third area of economic instrument reform in the UK is provision of subsidies to encourage environmental improvements.[98] In contradistinction to taxes that may work to internalize the environmental costs of development, subsidies can be applied to compensate those that provide positive externalities to society. Conceptually, such positive subsidies are justified under the 'beneficiary-compensation principle' – i.e., compensate those that perform environmental services of benefit to broader society.[99] Subsidies may comprise government expenditure, taxation concession, or assumption of liability, which decrease the cost of providing a specific good or service. Unfortunately, subsidies have acquired a poor reputation in environmental policy-making circles because of their traditional association with facilitating inefficient resource allocation and over-exploitation.[100] Agriculture, forestry and water supply are some of the sectors that have been severely distorted by politically motivated subsidies and similar support schemes, operated in the EU and abroad.[101] The use of subsidies to businesses involved in the UK's new greenhouse gas emission abatement initiatives is also problematic as these are essentially politically-motivated concessions to enable passage of the reforms.

In the UK, positive environmental subsidies have been directed to the agricultural sector to promote sustainable farming. The use of economic incentives to promote less environmentally damaging farming was introduced into UK legislation by the Wildlife and Countryside Act 1981. It authorized compensation payments to farmers for reducing activities damaging designated Sites of Special Scientific Interest (SSSI).[102] However, the management agreement schemes through which payments would be channelled were hampered by unclear responsibilities for their financing, a paucity of funds available from the Department of the Environment, and negotiation difficulties with landowners. The Countryside and Rights of Way Act 2000 has created a stronger framework for protecting SSSIs, including compensation payments to land owners whose property is subject to a management scheme.[103] Opportunities for environmental subsidies to farmers also exist under agricultural regulations. In 1985 the EC authorized a broad application of the environmentally sustainable agriculture idea through Article 19 of the Structural Regulation,[104]

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[98] See F. Cairncross, 'Natural Resource Management and Subsidies' in *Green Inc. A Guide to Business and the Environment* (F. Cairncross (ed.)) (Earthscan, 1995) 74.

[99] See R. Gale, S. Barg and A. Gillies (eds.), *Green Budget Reform: An International Casebook of Leading Practices* (Earthscan, 1995).

[100] See N. Myers and J. Kent, *Perverse Subsidies* (International Institute for Sustainable Development, 1998).

[101] See OECD, *Water Subsidies and the Environment* (OECD, 1997); J.G. Tisdell, 'The Price of Irrigation Water' in (1996) 26(1) *Economic Analysis and Policy* 95.

[102] S. Bell and D. McGillivray, *Environmental Law* (Blackstone, 2000) at pp. 628-630.

[103] Detailed in schedule 9.

[104] Council Regulation (EEC) No 797/85 of 12 March 1985 on improving the efficiency of agricultural structures.

allowing Member States to pay aid to farmers in appropriately designated areas of high conservation value. Under the auspices of the Agriculture Act 1986 the Ministry of Agriculture subsequently moved to provide subsidy payments to farmers in designated Environmentally Sensitive Areas (ESAs).[105] The ESAs are places of national environmental significance, whose conservation depends on the adoption, maintenance or extension of a particular form of farming practice. Each ESA agreement regulates drainage, grazing and fertilizer use, and stipulates the maintenance of conservation features such as hedges, with grants covering between 60-80 percent of capital costs. By 2001 there were 22 ESAs in England, covering some 10 percent of agricultural land. The third major environmental subsidy is the Countryside Stewardship Scheme (CSS), which aims, through the disbursement of grants to farmers that have entered into management agreements, to protect rural landscape amenity values and their wildlife habitats and historical features. The CSS was launched in 1990 and operates outside ESAs, covering some 150,000 hectares of land in England. Finally, there exists the Environmental Action Fund (EAF), administered by DEFRA, to help English voluntary groups to undertake bio-diversity conservation and education for sustainable development.[106]

D. Constraints to the UK Reforms

Despite the pace of recent UK initiatives to embrace economic instruments, policy instrument gaps and unfulfilled agendas remain. Notably, little progress has been made in the UK in establishing more comprehensive 'ecological tax reform', despite suggestions in the *Sustainable Development Strategy* 1999 that the UK tax system would move in this direction.[107] Ecological tax reform involves the design of the entire tax system (as distinct from specific tax rules), and has been defined as 'shifting taxation off the value-adding activities of people (employment, enterprise and investment) onto the value-subtracting use of energy and resources and associated creation of wastes and pollution'.[108] The EC has endorsed this strategy, proposing that eco-tax revenues may be applied 'to decrease other taxes which are perceived as distorting the economy (such as labour taxes)'.[109] According to proponents,

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[105] See Ministry of Agriculture, Fisheries and Food (MAFF), *Environmentally Sensitive Areas: First Annual Report as required Under Section 18(8) of the Agriculture Act 1986* (MAFF, 1989); MAFF, *Our Living Heritage, Environmentally Sensitive Areas* (MAFF, 1993).

[106] See DEFRA: <www.defra.gov.uk/environment/eaf/index.htm> (visited 10 December 2001).

[107] *Sustainable Development Strategy*, *supra* note 57, at section 5.8.

[108] David Gee as cited in C. Hamilton et al., *Ecological Tax Reform in Australia* (Australia Institute, 1997) 1.

[109] European Commission, *Environmental Taxes and Charges in the Single Market* COM(97) 9 final, clause 7.

ecological tax reform may be politically viable as it can reduce environmental damage whilst increasing economic welfare through promotion of new sustainable industries.[110] The German government has gone the furthest in implementing ecological tax reform.[111] Under the Law Initiating the Ecological Tax Reform, introduced in April 1999, the German federal government is progressively increasing energy taxes whilst reducing employees' and employers' social security contributions, to create overall a revenue-neutral situation although with differing effects for companies and individuals.[112]

Both the UK's landfill tax and its climate change levy (CCL) show some sensitivity to this approach in that each provides for off-setting reductions of employers' national insurance contribution (NIC) taxes. The government has stated that 'there will be no net gain to public finances' from the CCL.[113] The CCL revenues are recycled to levy payers via a 0.3 per cent cut in employers' NICs and 120 million GBP of support for energy saving measures. However, energy intensive companies employing a small staff will not benefit substantially from the NIC rebates.[114] The government has established a Carbon Trust to recycle around 100 million GBP in climate change levy receipts over the next three years to facilitate the acquisition of cost effective, low carbon technologies and other measures by industry and commerce.[115] However, much more substantial changes to the UK tax system are clearly needed to achieve a comprehensive ecological tax system; the environmental taxes foreshadowed in the March 1999 budget would bring the nation's environmental tax revenue in 2001–2 to some 3 billion GBP (10 billion GBP if including fuel duties), but this is a small sum compared to the major sources of public revenue, such as income tax (90 billion GBP), VAT (54 billion GBP) and corporation tax (30 billion GBP).[116]

Of course, more comprehensive reform of UK environmental law and policy poses political risks. The CCL itself was watered down following lobbying from the steel and chemical industries.[117] A proposal for a pesticides tax was grounded

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[110] See K. Bubna-Litic and L. de Leeuw, 'Can our Taxation System Support "New" Sustainable Industries?' in (1999) 16(2) *Environmental and Planning Law Journal* 140.

[111] See M. Rodi, 'Ecological Tax Reform in Germany' in (2000) 54(8/9) *Bulletin for International Fiscal Documentation* 486.

[112] German Federal Environment Ministry, 'The Ecological Tax Reform – Its Initiation and Continuation': http://www.bmu.de/english/fset800.htm (visited 6 December 2001). See also the exemptions contained in the subsequent Law on Continuing the Ecological Tax Reform, of November 1999.

[113] DEFRA, *The UK's Third National Communication under the United Nations Framework Convention on Climate Change* (DEFRA, October 2001), 30.

[114] See N. Wilks, 'Clouds over the Climate Levy' in (2000) 14(18) *Professional Engineering* 20–21.

[115] DEFRA, *The UK's Third National Communication under the United Nations Framework Convention on Climate Change* (DEFRA, October 2001) 6.

[116] Figures obtained from 'A Big Step Forward for Green Tax Reform' in (1999) 290(March) *ENDS Report* 3.

[117] See Church, *supra* note 87.

altogether because of strident opposition from the UK National Farmers Union.[118] Instead, the government settled for a plan to work with the British Agrochemicals Association to establish voluntary pollution control measures.[119] Further, economic instruments, embodying a concept of user pays, may collide with social policy considerations.[120] The existence of reduced rates of VAT on electricity and water consumption reflects a commitment to attenuate environmental policy goals to ensure poor households are not paying a disproportionate share of their limited income on what are seen as basic necessities. However, one should consider possible reforms from a historical perspective – the establishment of the CCL would have seemed scarcely conceivable a few years ago, given Britain's early opposition to EU plans for a carbon tax. But growing popular anxieties about global warming and the acceptance by some industry sectors of economic gains from becoming more energy efficient helped make this reform viable.

In addition to political obstacles, there can exist a not insignificant regulatory gap between the theoretical virtues of taxes and trading mechanisms and the practical difficulties encountered by governments in operationalizing proposals. Although some commentators see economic instruments as a vehicle for reflexive regulation, communicating environmental norms in the language of the market,[121] others are less sanguine about such prospects. Teubner argues that economic instruments do not necessarily translate into concrete incentive measures for corporate actors, but may produce 'only an outside noise, as extremely vague measures' which is distorted by intra-organizational corporate decision-making and market dynamics.[122] Taxes and tradable permits for example encourage reflection by industry about relative costs of compliance.[123] But to the extent that the legal system arbitrarily determines the economic prices and signals to be communicated, the less reflexive economic policy instruments become and the re-regulation dimension of economic instruments creates a risk of costly juridification. But however designed, economic instruments invariably pose enforcement problems just as conventional regulation – for example ensuring that tradable permit holders comply with emission allowances or that businesses do not seek to eschew pollution tax liabilities. The UK's landfill tax for example has suffered compliance problems, such as an increase in midnight dumping and other evasive measures.[124]

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[118] Anonymous, 'U.K. Pesticide Tax' in (1997) 159(26) *Chemical Week* 92.
[119] Anonymous, 'Technology and Environment' in (2000) 62(7) *Chemical Week* 53.
[120] See A.D. Tarlock, 'Environmental Protection – The Potential Misfit Between Equity and Efficiency' in (1992) 63 *University of Colorado Law Review* 871.
[121] E.W. Orts, 'Reflexive Environmental Law' in (1995) 89(4) *Northwestern University Law Review* 1227 at p. 1271.
[122] G. Teubner, 'The Invisible Cupola: From Casual to Collective Attribution in Ecological Liability' in (1994) 16(2) *Cardozo Law Review* 429 at p. 450.
[123] Orts, *supra* note 120, at p. 1271.
[124] Anonymous, *supra* note 79.

The UK government has acknowledged weaknesses in its drive to create new economic-based policy tools. Whilst the government's own *2000 Progress Report*[125] on implementing the *Sustainable Development Strategy* is vague and unhelpful in assessing the contribution of new economic and other policy instruments, the House of Commons Environmental Audit Committee has concluded that the government has made insufficient effort. The Committee criticized the government's removal of the 'fuel duty escalator', the lack of subsidies offered to develop innovative environmental technologies and a failure to introduce a pesticides tax as the Committee had previously recommended.[126]

Beyond potential implementation weaknesses, economic instruments, just as ecological modernization policy more generally, may be criticized for failing to engage with the underlying contradictions between capitalism and ecological systems. The core problem with reliance on economic policy instruments is the inaccessibility of many environmental functions and values to the market mechanism. The values of nature are complex, varied and inter-connected. The concept of Total Economic Value has been advanced by ecological economists to explain that many environmental values, although ultimately economically important in terms of maintaining life support systems, have no direct use value.[127] De Groot suggests that market values, articulated by taxes and tradable permits, for example, capture only a small subset of the spectrum of values of nature, with existence values and option values remaining largely beyond the purview of economic instruments.[128] The market is a mechanism that allocates resources among traders, but the conditions necessary for markets to flourish in relation to environmental goods are not easily obtained. The complex properties of ecological systems mean that it can be difficult to create well-defined marketable rights to environmental goods, that sufficient information about environmental goods is often lacking and the transaction costs of establishing institutional arrangements to combat these problems may be 'forbiddingly large'.[129] The socio-cultural dimensions of market mechanisms also need to be considered, as theorists are prone to giving inadequate attention to the institutional context of where the economic models are supposed to be applied.[130]

Overall, it is important to recognize that using market institutions as a means of environmental policy can only *supplement* and not replace all conventional environmental regulation techniques such as planning, impact assessment and

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[125] DETR, *Achieving a Better Quality of Life; Progress Report on Implementation of Sustainable Development. Government Annual Report 2000* (DETR, 2001).

[126] House of Commons Environmental Audit Committee, *Second Report. Pre-Budget 2000: Fuelling the Debate* (House of Commons, February 2001).

[127] See, e.g. O. Fromm, 'Ecological Structure and Functions of Biodiversity as Elements of Its Total Economic Value' in (2000) 16(3) *Environmental and Resource Economics* 303.

[128] R.S. de Groot, *Functions of Nature. Evaluation of Nature in Environment, Planning and Decision Making* (Wolters-Noordhoff, 1992).

[129] B. Gustafsson, 'Scope and Limits of the Market Mechanism in Environmental Management' in (1998) 24 *Ecological Economics* 259 at pp.265–266.

[130] Ibid., at p. 267.

pollution licensing. Determining ecological limits and environmental quality objectives should ultimately be a social and political exercise because, whilst the market may facilitate resource allocation, it contains no mechanism governing scale – the market has no intrinsic tendency to contain growth within biosphere limits.[131] Economic analysis can help determine the cost of achieving such ecological standards, but not the substantive merits of environmental objectives.

E. The Way Forward?

In addition to the need for further work on means to effectively integrate economic instruments into the panoply of environmental regulation and higher policy goal decision-making, there is another frontier of market-based reform that governments worldwide may need to begin to explore more seriously if environmentally sustainable economies are to be achieved. This frontier concerns not the role of market instruments, but market *organizations*, which hold an influential position over patterns of investment, development resourcing and other financial support that sustains economic activity. A more effective programme of environmental policy reform in the UK will ultimately need to address the role of the financial services sector – notably the investment, banking and insurance services – that finance and drive economic development and hence generate environmental pressures at source. Economic instruments for the environment such as pollution charges and tradable rights may be suitable for reforming the institutional environment of specific industries and sectors – they convey costs and benefits of development options, thereby facilitating allocative efficiency in resource use and technological innovation. But economic instruments tend to be less effective in generating macro-economic structural changes derived from access to capital markets that shape the overall scale of aggregate resource use.

The EC's *Fifth Environmental Action Programme* recognized the importance of financial institutions by declaring that 'financial institutions which assume the risk of companies and plants can exercise considerable influence – in some cases control – over investment and management decisions which could be brought to play for the benefit of the environment'.[132] Internationally, the United Nations Environmental Programme (UNEP) in 1991 launched a scheme to get banks and insurers more committed to environmental issues by encouraging financial institutions to endorse UNEP statements on sustainable development.[133] But overall, little substantive work

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[131] See H. Daly, 'Allocation, Distribution and Scale: Towards an Economics that is Efficient, Just and Sustainable' in (1992) 6 *Ecological Economics* 185.

[132] European Commission, *supra* note 21, at p. 25.

[133] United Nations Environment Program (UNEP), Advisory Committee on Banking and the Environment, *Statement by Banks on Environment and Sustainable Development* (UNEP, 1992).

has been done by the EC or UNEP on the role of financial institutions in promoting sustainability. Also, the role of financial organizations as instruments of social control capable of influencing corporate environmental management has received limited attention in the environmental regulation literature.[134] Financial institutions may be relevant to the achievement of sustainability in a variety of guises; as investors, supplying the resources for environmental initiatives; as valuers, pricing risks and estimating returns for companies; and as stakeholders, such as shareholders and lenders, exercising influence over corporate management.

The UK government, like other States, has yet to critically consider how strategies such as ethical investment, green lending and pollution insurance markets could be nurtured to promote sustainable development. Strategies such as mandatory corporate environmental reporting, obligations on investors and lenders to disclose high risk lending and compulsory environmental insurance for major polluters, are some of the key reforms the governments will need to consider if they wish to send the right environmental signals to the marketplace.[135] Steered through such reforms, private financial organizations could provide a means of transmitting and amplifying primary regulatory controls through the economy. For bank lenders, ensuring that loan repayments are not compromised by borrowers' environmental liability problems provides an obvious pathway for feeding environmental policy into development lending.[136] Banks may wish to veto projects that risk environmental liabilities or, conversely, promote best practice by offering specialist environmental financial services.[137] For institutional investors, such as pension funds, there exists a similar downside risk but there is also scope for upside gain as the investment benefits from eco-efficiency and other environmental performance improvements in companies that aid profitability.[138] The insurance market is another arm of the financial services sector that can help remedy problems of environmental risk transfer and the cost of pollution.[139] It is now widely recognized that the insurance sector can help promote sustainability through its ability to price various types of environmental risk and to help pay for environmental damage (particularly where

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[134] Among useful studies, see Gunningham and Grabosky, *supra* note 54, 106–123; P.N. Grabosky, 'Green Markets: Environmental Regulation by the Private Sector' in (1994) 16(4) *Law and Policy* 420.

[135] On the reform of the financial services sector, see further B. Richardson, 'Financial Institutions for Sustainability' in (2000) 8(2) *Environmental Liability* 52. B. Richardson, *Environmental Regulation through Financial Organisations* (Kluwer Law International, 2002).

[136] For theoretical aspects of bank lending and risk management, see G. Gorton and J. Kahn, James, 'The Design of Bank Loan Contracts' in (2000) 13(2) *Review of Financial Studies* 331.

[137] See generally S. Schmideiny and F. Zorraquin, *Financing Change: The Financial Community, Eco-Efficiency and Sustainable Development* (MIT Press, 1996).

[138] S. Schmidheiny, *Changing Course: A Global Business Perspective on Development and the Environment* (MIT Press, 1992) at pp. 10–11.

[139] See P.K. Freeman and H. Kunreuther, *Managing Environmental Risk Through Insurance* (Kluwer Academic, 1997).

the party responsible has insufficient resources).[140] With suspect environmental performers being excluded from insurance or paying higher premiums, the insurance market provides incentives for improved corporate conduct.[141]

The challenge for governments is to introduce reforms that can encourage financial service providers to address the environmental risks and benefits of projects and companies they fund or insure. Tentative reforms have begun in the UK, such as the 1999 regulations made under the Pensions Act 1995 requiring occupational pension funds to disclose publicly their policy on ethical investment.[142] But the opportunity for more wide-ranging reform was perhaps lost when the government rejected proposed amendments to its draft Financial Services and Markets Act 2000 to incorporate certain sustainable development considerations in the remit of the governing Financial Services Authority. The UK banking sector is largely immunized from the environmental liabilities of their borrowers,[143] although the British Bankers Association has advised members that: '[b]y introducing straightforward environmental practices you can gain a competitive advantage, not least because you can avoid the costly liabilities which may arise from increasing regulation'.[144] The UK has yet to mandate environmental reporting by companies and financial organizations, although evidence of the effects of such reforms are already evident in the United States where the Federal Securities and Exchange Commission requires listed companies to file annually key environmental information over their liabilities, costs, management and other issues.[145] The banking sector has also been profoundly influenced in that country by the Comprehensive Environmental Response, Compensation and Liability Act 1980,[146] which increased lender liability for contaminated land cleanup and so led to a reduction in the number of environmentally damaging activities financed.[147]

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[140] K.S. Abraham, *Environmental Liability Insurance Law* (Prentice-Hall, 1991) at p. 15.

[141] Schmidheiny, *supra* note 137, at pp. 64–65.

[142] *Occupational Pension Schemes (Investment, and Assignment, Forfeiture, Bankruptcy etc.), Amendment Regulations 1999*, clause 2(4); see D. Smith, 'Pension Funds to Adopt Ethical Investment Policy', *The Times*, 25 June 2000, business section, at p. 2

[143] See R. Hooley, 'Lender Liability for Environmental Damage' in (2001) 60(2) *Cambridge Law Journal* 405 at p. 410.

[144] British Bankers Association (BBA), *The Environment – The Challenge for Business and Banking* (BBA, July 1997).

[145] The form 10-K is an annual report pursuant to ss. 13 or 15(d) of the Securities Exchange Act 1934; see further E.I.A.G. Geltman, 'Disclosure of Contingent Environmental Liabilities by Public Companies under the Federal Securities Laws' in (1992) 16 *Harvard Environmental Law Review* 129.

[146] See D.R Berz, 'Lender Liability under CERCLA: In Search of a New Deep Pocket' in (1991) *Banking Law Journal* 108.

[147] Environmental lender liability has become a serious grievance in many other Western countries: see e.g. M.H. Ogilvie, 'Enter at Your Own Risk: Environmental Lender Liability in Canada' in (January 1996) *Journal of Business Law* 94; J.D. Lipton, 'Project Financing and the Environment: Lender Liability for Environmental Damage in Australia' in (1996) 11 *Journal of International Banking Law* 7.

A detailed discussion of environmental regulation through the financial services is beyond the purview of this article. However, the important issue that reformers should appreciate is that the inclusion of taxes, tradable permits and other economic instruments in environmental law systems should be regarded as not the only market-based policy tools available to impregnate our economic systems with environmental concerns. There also exists potential to environmentally reorient markets towards sustainability through reforms that harness financial organizations as instruments of corporate influence.