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JAY, S. A. and MARSHALL, R.

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**The Place of Strategic Environmental Assessment
in the Privatised Electricity Industry**

Stephen Jay and Ross Marshall

Stephen Jay is a lecturer at the School of Planning and Landscape and a member of the EIA Centre, University of Manchester, Oxford Road, Manchester, United Kingdom M13 9PL; Tel: +44 161 275 0680; E-mail: stephen.a.jay@man.ac.uk. Ross Marshall is the National Environmental Assessment Service Manager at the Environment Agency of England and Wales, and was formerly the Environmental Planning Manager of ScottishPower's Power Systems business.

The Place of Strategic Environmental Assessment in the Privatised Electricity Industry

Summary

The private sector has given relatively little attention to the emergence of strategic environmental assessment (SEA); even recently privatised utilities, where SEA might be deemed particularly appropriate, and whose activities are likely to fall within the scope of the European Union SEA Directive, have shown less interest than might be expected. However, the global trend towards the privatisation of state-owned enterprises makes the adaptation of SEA towards these industries all the more pressing. This paper addresses the place that SEA might take within the electricity sector, taking the privatised UK electricity industry as an example. Particular challenges are posed by the radical restructuring of the industry, designed to introduce competitive behaviour, making the development of comprehensive SEA processes problematic, and requiring SEA to be placed in the context of corporate environmental policy and objectives.

Key words

Strategic environmental assessment, privatisation, utilities, electricity industry, UK.

Introduction

The concept and practice of Strategic Environmental Assessment (SEA) has attracted increasing international interest over the last decade from government, academia and industry. SEA concepts have been developed, and practice has been extending into a range of sectors internationally (Fischer & Seaton 2002). However, this growing awareness and application of SEA has, for the most part, been

restricted to public sector activities, or institutional contexts such as development funding. In the UK, SEA approaches have become predominately established within public land-use and sectoral planning, and some funding activities (Thérivel 1998, 2004), with relatively little practical attention being given to SEA in the private sector (Marshall 2003). This is partly due to the current lack of regulatory requirements for SEA within industrial sectors, whereas there has been a growing body of policy supporting and promoting SEA in more public contexts. This absence of a perceived need for SEA in the private sector stands in contrast to the early, voluntary take-up of environmental impact assessment (EIA) by some industrial concerns such as the oil and energy sectors (Glasson et al 1999). Only recently has SEA started to be explored by private companies as a potential means of contributing towards their environmental performance, and as a practical tool to facilitate business objectives. In this context, Marshall (2003) has drawn attention to the relationship between SEA and business practice, and has suggested that it must be clearly demonstrated that SEA can contribute to a company's aims, and be integrated into the decision-making processes by which business solutions are sought.

One important sector of industry where it might be expected that SEA practice should become quickly established is that of recently privatised industries. Many of these are former public service utilities, engaged in the planning of large-scale and environmentally sensitive infrastructure, of the kind that might normally be subject to SEA. For instance, the list of sectoral activities falling within the scope of the European Union 'SEA Directive' includes several that are increasingly being transferred to the private sector, such as waste management, energy, forestry, telecommunications and water (EC 2001). There is evidence of SEA practice developing within some of these, especially the water industry (Byron & Sheate 1997), but experience elsewhere is limited. There remains an urgent need to develop forms of strategic environmental planning within these industries.

This need is heightened by the accelerating global trend towards the privatisation of state-owned enterprises (Parker & Saal 2003). OECD countries, especially, have been engaged in large-scale programmes of privatisation over the last twenty years (OECD 2001), to the extent that some now retain few saleable assets. The UK has been in the vanguard of this movement, with the proportion of GDP accounted for by its remaining nationalised industries dropping from 9% in 1979 to less than 2% in 1997 (Parker 1998). Non-OECD countries have also embarked upon significant programmes of privatisation.

However, little attention has been given to the challenges that the transfer of assets from public to private sector ownership might pose for the development of SEA practice (DETR 1998). Yet it could be hypothesised that with their inherited public service functions, remaining statutory obligations and strategic scales of operation, these newly commercialised organisations are relatively well placed to adopt SEA. Moreover, they hold the potential, given their commercial and public interest issues, to form a bridge between the public and private sectors with regard to the development of SEA.

We therefore seek to examine in this paper the character of one of the newly privatised utility industries and the possible place of SEA processes within it. The UK electricity industry has been chosen, as an activity that has experienced a radical form of privatisation designed to maximise the degree of commercial competition within it, and as one that falls within the broader context of the energy sector, included in the scope of the EU SEA Directive. Privatisation of this sector in the UK has involved major restructuring, including its break-up from a national entity into approximately 30 component parts. One of the key concerns of this paper is to explore possible locations for SEA within these new structures, and the broader implications of the objectives of privatisation for environmental planning. Initially, however, we review the extent to which SEA has already been practiced within the energy and electricity sectors, as a means of introducing the limitations and aspirations appearing with regard to SEA in this sector.

SEA and the Energy Sector

The energy sector has, for some time, been seen as an obvious candidate for the application of SEA. Certain of its characteristics give added weight to the need for SEA, such as the central importance of energy to national economies, the significant environmental issues associated with energy supply and use, and the growth in the use of renewable resources (Thérivel, et al 1992, Sheate 1996). However, practice has been slow to develop in the sector, with relatively few examples documented. Where SEA has been carried out, it has focused either on broad-level energy policy, or on narrowly-defined components of the industry.

At policy level, an early SEA was carried out of the Netherlands' national electricity supply plan by government departments in 1992. The plan provided policy direction for the country's fuel mix, and indicated locations for plant and transport facilities. The SEA involved the consideration of different energy scenarios, and provided restrictive criteria for the siting of power stations (Sheate 1996). Other SEAs of energy policy have also made use of scenario analysis, especially with regard to energy supply and use, in which the likely effects of different energy mixes and degrees of energy conservation have been assessed. Recent examples, conducted by national governments, are to be found in both developing and transition countries: Pakistan, the Czech Republic and Slovakia (Dalal-Clayton & Sadler 2005). A multi-criteria analysis of Canadian energy policy scenarios has also been carried out by Noble (2002). In the UK, a report by the Royal Commission on Environmental Pollution (RCEP) on energy prospects (2000), although not referred to as an SEA, similarly considers a range of scenarios, and advocates a long-term strategy aimed at massive reduction of carbon dioxide emissions. A number of analytical approaches have been tested on a Swedish energy-related tax proposal by Nilsson et al (2005).

These approaches to SEA, often theoretical and assessing purely hypothetical scenarios, are open to criticism as having little political or practical credibility. They may also assume an unrealistic degree of centralised control over the implementation of policy, and fail to recognise the increasingly disaggregated and independent commercial nature of the sector. Even if the consideration of visionary alternatives is seen as a legitimate role for SEA, with the aim of shaping national policies, the generation of scenarios must take into account the structure and operation of the industry, and have in mind some means of transferring from present to possible future configurations. Nonetheless, it is consistent with a hierarchical model of environmental assessment that the presentation of scenarios should seek to influence downstream decision-making processes. So, for example, in the UK, the RCEP study indicates some far-reaching consequences of possible policy shift for electricity networks, especially the likely need for:

- extensions of the transmission network to remote, major sources of renewable energy;
- networks to be better adapted to intermittent sources and embedded generation;

- the development of storage facility, or the maintenance of fossil fuel plant, to meet temporary shortfalls in intermittent sources.

The point is made that these represent major challenges for the industry, which do not appear to have been fully appreciated (RCEP 2000).

With regard to the SEA of specific components of the energy sector, some examples from the 1990s have been documented, including the analysis of clean coal technologies in the USA (Byron & Sheate 1997), comment on a Swedish municipality's energy plan (EC 1997), and the potential for wind farm development in a German district (Kleinschmidt & Wagner 1996). More recently, SEA has been adopted as a means of assessing the effects of offshore energy development: for exploration drilling in the UK North Sea (DTI 2001) and the Gulf of Mexico (EPA 2004), the petroleum industry in the Canadian Atlantic (Environment Canada 2004) and for UK offshore wind energy (DTI 2002, BMT Cordah Limited 2003). Some of these SEAs are strongly EIA-based, providing technical analyses of proposed activities, with primary emphasis, in the case of the DTI studies, on baseline data. SEA is also being carried out of a UK regional study of renewable energy resources, sponsored by regional government, though here an objectives-led approach is being taken (Levett-Therivel 2003).

SEA practice within the energy sector has, therefore, been limited in scope, with the emphasis firmly upon energy supply, and with some attention being given to energy conservation; no direct interest (except from the RCEP) has been shown in electricity networks. Moreover, SEA has been restricted almost entirely to public strategies and carried out by public agencies, especially government bodies with clearly defined energy-related responsibilities. There is no evidence of SEA being taken up comprehensively by the energy industry. This is of some concern, given the international trends of privatisation and liberalisation of the sector, and the concomitant loosening of regulation, over, for example, the siting of plant. Even in the UK, where liberalisation of the industry has advanced the furthest, explicit SEA practice has been applied only to offshore resources, where the public 'ownership' of those resources, not to mention their environmental sensitivity, imposes a need for strict regulation of future exploitation.

Privatisation of the UK Electricity Industry

Privatisation can broadly be defined as “the shifting of a function, either in whole or in part, from the public sector to the private sector” (Butler 1991, p 17). Most of the UK’s major utilities underwent this process between the mid 1980s and the mid 1990s, during the time of consecutive Conservative governments. Privatisation is not a single measure, but can take many different forms, representing varying degrees of relinquishment of state control (Hodge 2000). Initiatives in the UK have generally involved the sale of assets, eventually leading to total private ownership and high levels of independence for the new companies. However, the structures created through privatisation have not been uniform in the UK. One of the earlier privatisations, of the gas industry, was based on a unitary model, leading to the neo-monopoly of British Gas. But in subsequent programmes, a concerted attempt has been made to introduce competition from the outset, through the restructuring of industries into smaller, inter-competing elements – hence the complex de-integration of the railway industry. A radical approach was also taken to the electricity industry, where the aim to shift to a competitive environment was given additional force by a political desire to diversify energy supply and reduce dependence on coal (Surrey 1996, Thomas 1996a).

Electricity Sector Restructuring and Competition

Under the UK nationalised electricity industry, electricity generation and transmission were the responsibility of the Central Electricity Generating Board (CEGB), while distribution and supply were in the hands of regional electricity boards¹. The Electricity Act 1989 provided for the near-complete privatisation of the sector in 1990-91. In England and Wales, vertical de-integration of the industry took place, with different bodies becoming responsible for generation (National Power and PowerGen), transmission (National Grid Company), and distribution and supply (twelve regional companies). The nuclear industry remained in public ownership, with part privatisation in 1996. In Scotland, a less radical restructuring took place, as vertical integration of the industry was retained within Scottish Hydro-

Electric and Scottish Power. Different arrangements again were applied in Northern Ireland; these are not considered further here.

The principle of competition was not applied across the whole of the broken-up industry. Transmission and distribution activities were recognised as natural monopolies, and have continued as unified operations, run by regulated companies. Competition was introduced at the points of generation and supply. With regard to generation, electricity could be purchased at competitive prices from individual generators; a spot market, known as the Pool, was created, by which generators making the lowest bids were scheduled to meet anticipated demand (this has recently been replaced with a different system – see below.) This market was opened to new entrants, both in the sense of new power plant constructed by existing generation companies, and in the sense of new companies entering the business. There are two important consequences of this for electricity infrastructure. Firstly, competitive bidding has favoured the generation of cheaper electricity from gas rather than coal; this resulted in the closure of many coal fired stations and the construction of a large number of new gas-fired power stations (the ‘dash to gas’). This, in turn, has led to significant reductions in carbon emissions and other pollutants, a move that has been commented on as an environmental benefit of electricity privatisation (MacKerron & Watson 1996). This was a fortuitous consequence, however; allied more closely to the nature of privatisation was the prioritising of the economics of energy supply over other considerations such as the environmental and social impacts of siting new plant. Secondly, because new power plant, once approved, has the right of connection to the grid, the transmission companies have had no planning function with regard to generation other than the construction of connecting lines. This places them in the position of simply reacting to the initiatives of generation companies, and makes the strategic planning of their networks more problematic.

Generation has not been completely thrown open to the free market, however. Firstly, nuclear power has been protected from competition (by being subsidized through a ‘fossil-fuel levy’ on electricity prices). Secondly, renewable energy has received favourable treatment, currently through an obligation on suppliers to purchase a proportion of their electricity from renewable sources (via a system of ‘renewable obligation certificates’). This exemplifies a continuing measure of government involvement in the industry.

In Scotland, the newly privatised companies were initially allowed to retain the complete energy chain within their areas, so that generation and transmission continued to be held within the same companies. There are a number of possible reasons for this, such as the smaller scale of the industry and an electorate hostile to the programme of privatisation (Thomas 1996a). It has sometimes been argued that not ‘unbundling’ the system in Scotland has obstructed the aims of privatisation (Newbery 2002), though regulatory requirements have ensured uncontested access to the grid from new entrants to the generation business.

With regard to supply, competition took off after 1995, after which electricity could be bought from competing suppliers – either the marketing entities of the original distribution companies, or new suppliers who entered the market. Initially, only heavy users of electricity had access to competing suppliers, but the freedom to ‘shop around’ was progressively extended to all consumers, further encouraging competitive activity. This has resulted in a reduction in energy costs for consumers, a move anticipated by the Office of Gas and Electricity Markets (Ofgem), whose primary remit is to protect consumer’s interests and to promote competition of this kind. The opening of the energy supply market place also unleashed a wave of mergers, takeovers of the companies, and the entry of new players into the supply business (Sadler 2001).

Although it is difficult to identify any direct consequences that competition at the point of supply might have for the strategic planning of electricity infrastructure, there are questions about the difficulty of passing onto consumers non-essential costs, such as environmental improvements in the network. Indeed, there is a perception within the electricity industry that Ofgem will not countenance expenditure on environmental measures in infrastructure development, such as the placement of electricity lines underground (Cowell 2004). A second area in which the supply market could have consequences for electricity infrastructure is in the development of renewables. Supply companies now have to source a proportion of their supply from a renewable component, which many supply companies market under so-called green tariffs or funds. Theoretically, the take-up of these schemes could drive the further development of renewables, though the extent to which customer behaviour of this kind will push

suppliers beyond what is already required of them under their renewables obligations remains to be seen.

Currently, trading arrangements are being extended across the whole of Great Britain, to form a single market in electricity (the British Electricity Trading and Transmission Arrangements). This involves the replacement of centrally administered trading by bilateral trading between suppliers and generators; suppliers make estimates of forthcoming demand, based on their sales expectations, and contract directly with generators to meet their requirements. This represents a further decentralization of the industry, which recognises the increasingly competitive environment of generation and supply, and allows for more flexible responses by the many players involved to constantly fluctuating market conditions (Littlechild 2003).

Sectoral Internationalisation

Accompanying this progressive liberalisation of the industry has been a growing internationalisation of the sector, with companies at all levels of the industry investing overseas, or finding themselves the object of international takeovers. There has also been some vertical re-integration of components of the industry, with generation companies expanding into the distribution business (Sadler 2001), and some horizontal integration of businesses into other utilities. More complex configurations have started to emerge within the last decade in which umbrella corporations own a portfolio of related UK and international energy business interests. Infrastructure planning and environmental matters may therefore come under the increased influence of corporate thinking; for example, it is likely that environmental performance criteria will be shaped by overarching environmental policy drawn up at corporate level. Interestingly, Jennings (1999) found that the evolution of single business electricity companies to more diverse, international corporations has led to more difficult business environments, that then encourage a stronger role for corporate planning. Referring to PowerGen as a case study, he noted that industry and geographic diversification, increasing levels of competition, and the responsiveness of the regulator to competitive conduct, have created a complex environment that the company has been seeking to negotiate through the greater use of planning. Although planning of this

kind is primarily concerned with resource allocation, it is conceivable that environmental considerations could begin to find a place within it.

It should be noted that the changes in the electricity industry described above for the UK have been paralleled throughout the world. Indeed the UK, with some Scandinavian countries, has pioneered the transformation of centrally controlled monopolies to competitive electricity markets. There are significant variations in the way in which this has been carried out, but common elements have become widely established, namely competing generators, separate transmission and distribution bodies, third-party, non-discriminatory access, a retail market open to competition, and an independent regulatory body (Littlechild 2003). Some or all of these elements are now in evidence in a growing number of countries around the world, accompanied by internationalisation of the industry (Dubash 2003). Within the European Union, a clear commitment has been made to advancing the restructuring of the industry, through the 1996 Electricity Directive, by which the electricity market is being progressively opened up to competition, and through a decision of the European Council in 2000 to accelerate the pace of liberalisation, with a view to developing a pan-European market in electricity (Geradin 2002).

The Implications of Privatisation for SEA within the Electricity Industry

Loss of Centralised Planning

Through privatisation, the overriding change to the electricity industry has been the loss of central planning by a unified body (the CEGB) with responsibility for both generation and transmission acting collaboratively with the distribution networks. Although strategic environmental planning had not been a feature of the nationalised industry, centralised financial planning had been developing (Jennings 1999), and it could be argued that the potential existed for a hierarchical, forward planning regime, of the kind envisaged by early proponents of SEA (Lee & Walsh 1992, Wood & Djeddour 1992). The loss of the CEGB, at precisely the time when SEA ideas were emerging, has effectively undermined the possible

creation of a comprehensive SEA system for this industrial sector. The aspirations of some commentators for a tiered series of SEAs to be applied vertically throughout a sector like the electricity industry (eg. Fischer et al 2002) are therefore problematic, in that the institutional unity or framework for administering a system of this kind is now absent.

Nonetheless, overarching assessments of the industry are conceivable through the SEAs of energy policy, such as those referred to above, which represent attempts to shape the configurations of future energy capacity and use. In the absence of centralised planning, and in the more open-ended policy environment in which the energy sector now finds itself, it may well be, as suggested by Thérivel, et al (1992), that SEA can compensate to some degree for a lack of clearly-stated energy policy. However, attention needs to be focused more upon the strategic consequences of exploiting new or cheaper forms of energy, or market distortions through government promotion of renewables, rather than the possible outcomes of detailed, but imaginary, scenarios of electricity generation. Questions remain, nonetheless, about where the responsibility for such SEA would lie, especially given the exclusion of policy-level SEA from the provisions of the European Union SEA Directive.

Company-level Practice

The greatest potential for the development of SEA is likely to be within the domain of individual electricity companies, given that this is where institutional strength lies, created to some extent in opposition to that of competitors. SEA could develop within this context, either as a stand-alone exercise, or possibly with reference to external policy-level SEA, in relation to the internal planning processes of individual companies. It seems improbable that SEA could develop across corporate boundaries, despite the desirability of this from an integrated resource management perspective. Being introduced into companies, however, subordinates SEA to their business objectives, and diminishes the more principled stance that it might enjoy in more public domains, such as in local authority planning.

In this context, SEA is likely to be driven, firstly, by the need for compliance with environmental regulations. There are considerable uncertainties, however, about the extent to which SEA will become a legal requirement within the privatised electricity industry. As far as the SEA Directive is concerned, plans and programmes to which it applies are limited to those that have official status. They must be prepared by an 'authority', which certainly includes privatised utilities when carrying out statutory duties, such as providing electricity (EC 2003). But only plans and programmes legally or administratively required need be assessed, and only if they set the framework for the future development consent of projects (EC 2001). It is not clear, nor has government given guidance on, what plans and programmes currently prepared by electricity companies fulfil these criteria. In Scotland, however, SEA requirements are being considerably extended beyond those of the Directive, to include SEA not just for plans and programmes, but also for 'strategies' (Scottish Executive 2003); the implications of this for the electricity industry are yet to be clarified.

The second possible motivation for electricity companies to conduct SEA is that of good practice, a principle which is often advocated in SEA literature (eg. DETR 1998, Partidário 2000). However, an appeal to good practice that is premised primarily on a sense of public responsibility is unlikely to carry the same weight within private business as within the public sector. The notion of good practice is likely to fare better if linked to company objectives, or to corporate governance or stewardship. Some informal experience of SEA within industry (forestry) has already underlined the potential of this approach (Noble 2004). Here, SEA can be seen to contribute to the 'deliverability' of business solutions, and can offer some commercial advantage (Marshall 2003), although considerable advocacy may be required before senior staff are convinced of its possible value. Can SEA assist, for example, in the gaining of consent for new development, or in the selection of alternatives that may be most acceptable to the widest range of stakeholders? Given the uncertainty regarding the allowance of funding for environmental improvements, might SEA assist in justifying spending plans to the regulator?

Similarly, SEA might be linked to practices and terminology which are already familiar; Noble & Storey (2001) suggest, for example, that SEA might result in the selection of the best practicable environmental option (BPEO), adopting a concept which already has widespread currency in industry. Linkage might also be made with current issues facing the industry, such as the expected growth in renewables, with

difficulties ranging from accommodating small-scale plant in distribution networks to the development of major schemes in remote locations (DTI 2003a), with SEA playing a role in defining constraints and opportunities. In other words, a relationship needs to be built up between SEA and the industry, in which SEA is incorporated into the language and processes of existing business practices (similar developments are observable in relation to other approaches to environmental management at the firm level (Jones & Mason 2002)). There may also be potential for the development of a sustainability approach to SEA, in line with the implementation of the SEA Directive for planning in England (ODPM 2004) that resonates more closely with the development of practice in broader corporate social responsibility.

A distinction needs to be drawn in the possible application of SEA to the competitive components of the industry (generation and supply), and the regulated monopolies (transmission and distribution). The competitive components are, by definition, more strongly driven by commercial opportunity, and tend therefore to operate within shorter time frames and more site-specific geographies; they could be said to act at less strategic levels. An opportunity nonetheless exists for SEA to assist in plans for development, especially by generation companies. For example, SEA could assist in establishing stronger environmental criteria to guide development opportunities. Though the potential for SEA is greater with regard to the transmission and distribution companies: they have sole statutory responsibilities for the systems in their territories, and must maintain and operate reliable and technically integrated infrastructure across their licence areas. This provides a basis for strategic, future views of network capacity and development in the light of government policy and subject to formalised SEA. This forward planning role is compromised, however, by the obligation upon transmission (and, in the case of some scale-scale generation, distribution) companies to respond to the commercial ventures of generation companies by connecting new plant to the transmission grid or electricity supply networks. This places these companies in the position of having to react case-by-case to generation projects, a position that is not conducive to strategic planning. In reality, they are able to take some degree of initiative by indicating to the generation industry where network capacity exists for increased generation, or indeed, by upgrading the network in anticipation of likely future generation development. This is most probable where good potential for renewables has been identified, such as through current programmes within the UK's three transmission companies - the England and Wales Transmission Study, and the wider UK-based Renewable Energy Transmission Study (DTI 2003b).

Transmission and distribution licence holders are, in fact, required to prepare strategic plans setting out their intended work on their networks, which then act as guidance for generation interests. These *Seven Year Statements* are the strategic planning activity that currently holds the most promise within the UK electricity industry for the application of an SEA process; they are also the documents relating to the industry which are most likely to fall within the scope of the SEA Directive. It is here that SEA might best hope to find a toehold in the sector, acting as a catalyst for further and wider uptake (Marshall, 2003).

Niche Strategic Environmental Assessment

There needs to be recognition, therefore, of the difficulties presented by the break-up of the industry for the introduction of a tool, the purpose of which is to engage with the industry's activities as a whole. In their comparative study of the energy and water sectors, Byron & Sheate (1997) suggested that the greater fragmentation of the electricity industry, and the drive towards a competitive market, militated against the uptake of SEA. SEA procedures are therefore most likely to become established in the privatised electricity industry in an incremental and piece-meal fashion, in association with plan/programme-making activities that have little interconnection across the industry, but that relate directly to the internal strategies of individual companies. Some coherence may be provided by reference to public policy, but the emphasis is likely to be upon 'niche' SEAs, such as of studies of renewables potential, or major programmes of regional network refurbishment. Within the possible constraints of SEA regulations, this is likely to favour more adaptive SEA methodologies, with less concern for universal, prescriptive approaches, and greater responsiveness to the specificities of strategic actions and planning processes (Partidário 1999, 2000, Verheem & Tonk 2000).

This rather atomised approach might be seen as undermining one of the perceived benefits of SEA, which is to provide a comprehensive and integrated analysis of a sphere of activity, including the consideration of any cumulative effects that may arise (Fischer 1999). It is in this sense that SEA has been held up as a means of addressing the disjointed nature of electricity infrastructure planning resulting from privatisation; for example, one *cause célèbre* involved the approval of a major power

station with no apparent thought given to the associated need for a major, environmentally-damaging transmission line (Sheate 1995). (It should be noted that consents for generation and connection are now considered together (DTI 2000)). If, as seems probable, business-level SEA is to remain as disaggregated as the industry itself, there is an argument for a higher, framework level of SEA – not of a strongly interventionist kind that would run counter to the principles of privatisation, but one that could provide some degree of guidance for company strategies. Central government energy policy clearly provides one context for this, as discussed above. There is also the possibility of more overarching SEAs being located at the level of industry regulators. Although the primary purpose of regulators is to maximise the economic benefits of privatisation, by ensuring that effective competition is created and maintained, regulators have also been charged with some social and environmental responsibilities (Geradin 2001). In the UK, Ofgem, the regulatory body, has started to place greater emphasis on environmental considerations, suggesting, for example, that it could take into greater account externalities, such as pollution costs, when setting prices (Ofgem 2001) – though it remains insistent that policy direction of this kind must come from central government (Cowell, 2004). Nonetheless, Ofgem has started to carry out environmental assessment of its own administrative initiatives, such as the new trading arrangements (Ofgem 2003). This may well form the basis for a more structured SEA process, and also draw further attention to SEA from the industry as a whole.

Finally, there is scope for SEA at a more localised scale through which the activities and interactions of different players can be considered. In the UK, regional planning holds the potential for providing a context within which the interlocking components of the industry can be viewed and future possible trajectories assessed (indeed, the government has recently announced its intention to bring about regional energy strategies, though it is not yet clear what form these may take (DTI 2003a)). It is conceivable that regional spatial strategies, which are now required under the reformed planning system, could incorporate sectoral exercises of this kind. It is also worth noting that electricity companies may be involved as non-statutory consultees in the SEAs that local and regional governments will be carrying out of their own plans and programmes under the SEA Directive, adding to the industry's own awareness of SEA processes, and assisting the normalisation of SEA as a practice within companies.

Conclusions

The privatisation of state-owned enterprises has taken many forms over the last two decades, ranging from limited provision of private sector capital, to the complete transfer of assets to privately-owned companies. It may or may not be accompanied by deregulation (the removal of rules hindering competition) and liberalisation (the creation of competitive markets) of the activity concerned. But the underlying theme of privatisation is the insertion of market forces in utilities that had, through programmes of nationalisation, for instance, been characterised by central planning and notions of public service (Ernst 1994, Robinson 2000). Privatisation of the UK electricity industry provides a particularly striking example of this shift to stronger economic objectives being exercised in an increasingly competitive environment, and the loss of co-ordinated and public-interest driven infrastructure planning, which has often been hailed as the reduction of 'government interference' (Thomas 1996b). The prospects for the assimilation of SEA rationale and practice into privatised settings might therefore seem unpromising. By being conceptualised as an accompaniment to clearly-defined, authorised planning processes, which it seeks to inform and influence (eg. Théritel & Partidário 1996), SEA will struggle to find a place in contexts where strategic planning itself has become inherently difficult and weakened; its role is clearly called into question if the processes it seeks to assess are themselves ill-defined and hard to locate. This obstacle might be overcome to some extent, in that SEA has demonstrated that it can adjust to a far more diverse range of settings and decision-making activities than those originally envisaged (Partidário & Clark 2000). This has driven a conceptual shift away from prescriptive procedures to the adoption of more generic principles and the more flexible use of assessment tools (Verheem & Tonk 2000, Brown & Théritel 2000). The freedom to 'tailor' SEA to individual contexts may well assist the application of SEA to the disconnected elements of planning activity that do exist within the restructured industry, but SEA, given its presumption of strategic pathways that need assessing, will have some difficulty finding a place within the disjointed structures of radically privatised enterprises like the UK electricity industry.

However, even if privatisation is defined as the withdrawal of state intervention from previously public-owned enterprises, it has, in practice, been accompanied by continuing, watchful regulation, especially where public utility services remain at stake. Regulators have been set up primarily to oversee the

efficiency improvements that privatisation seeks to achieve, especially where residual monopolies are being operated. But they have also turned to other societal objectives; for example, attention has recently been given by the UK electricity regulator to questions of social equity (MacKerron 2003). Environmental concerns have also been addressed through broader environmental regulation, raising significant questions about the privatisation of electricity generation, for instance (Vickers & Yarrow 1994). Clear policy directions are also emerging in relation to select environmental issues, especially to do with climate change and the development of renewable sources of energy, with various associated regulatory mechanisms being proposed (DTI 2003a). Even in the UK, therefore, with one of the most liberalised forms of privatisation of the energy sector in the world, government intervention remains; it even appears in some respects, including environmental protection, to be on the increase. Although this is far from a reassertion of comprehensive, centralized planning, it can be said that in some respects, deregulation has been followed by re-regulation (Feigenbaum et al 1998). And though this may be seen as a retrograde step from the perspective of market economics (Robinson 2000), it does provide opportunities for environmental management tools, like SEA, to find a place, not just in the strict confines of compliance, but in the wider policy and regulatory frameworks that are evolving as an inescapable feature of privatisation. This potential relies, however, on SEA connecting directly with the issues and priorities expressed in those frameworks, and building up a relationship with the industry's direct interests, rather than necessarily attempting comprehensive, technically-driven assessments of the industry's activities; the use of objectives-led approaches to SEA would clearly be of value here.

The increasingly privatised landscape of national economies, including the provision of essential services, does not therefore appear to be overwhelmingly hostile to the introduction of processes, like SEA, that aim to ensure that far-reaching industrial activities retain consideration of the environmental impacts of their activities. The freeing of the economic conditions within which sectors like the electricity industry now operate has not resulted in an abandonment of constraints, and both social and environmental controls have come to the fore via stakeholder pressures, as well as various policy and regulatory tools. Indeed, it could be argued that privatised companies require stronger, rather than looser, forms of regulation in these areas. There are, however, significant difficulties facing the integration of SEA into restructured and de-integrated industries, and into companies now prioritising business objectives as much as any residual public service responsibilities they may have. There is a need here for SEA to be clearly linked to those objectives, and to build on existing environmental management principles and

practices within industry. There is also the potential for SEA, by virtue of its strategic level of interest, to draw upon, and inform corporate environmental policy and to direct corporate governance. It is to be hoped that SEA will also contribute to efforts to coordinate and integrate activities beyond company boundaries through higher levels of policy-making, including regional planning, and to ensure improving environmental conditions through the regulatory control of privatised enterprises.

Note

¹ The electricity industry consists of three major, interconnected physical components (often portrayed as a vertical hierarchy): *generation*, the production of electricity by various means, including the consumption of fossil fuel reserves in power stations, and the exploitation of renewable energy sources; *transmission*, the long-distance transfer of electricity at very high voltage, usually on large-scale overhead power lines; and *distribution*, the more localised, lower voltage transfer of electricity to consumers, via overhead lines and underground cables. Transmission and distribution networks are often referred to as grid systems. Finally, *supply* generally refers to the sale of electricity to consumers.

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