“Emerging Energies, Emerging Landscapes: Revisioning the Past, Constructing the Future”

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Paper Abstracts

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Lived landscapes of power plant: big dams and nuclear cooling towers in the Loire Basin

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River landscapes were largely used for energy generation. Along the 20th century, two forms have particularly marked creating new landscape archetypes : large dams and their reservoirs ; nuclear power plant and their cooling towers. The first should created “mirror lake”, the second “cathedral of the 20th century”, as conceived by the impact studies. Each time such equipment is built, some landscapes disappear, and others are constructed. These great works produce debates and conflicts taking part in the construction of landscapes. There are two processes : negatively, the mobilisation and the discourses “anti” bring a recognition of aesthetic and ecological values ignored. Positively, they create new forms and new practices that can bring lived landscapes. This contribution seeks to examine these dams and nuclear power plants impacts from an aesthetic of every day life in the Loire basin (Avril/Chouzé-sur-Loire ; Grangent/Saint-Victor-sur-Loire) : landscape is understood in a social representation way ; and we have been interested in the lived dimension of river landscapes. In this way, one can show that these two energy landscapes are lived very differently : if the large dams (but in fact, especially their reservoir) break the relation between riparians and river ; it’s not at all the case for riparians of nuclear power plant. How to understand it ? This contribution hypothesizes from the analysis of social representation : for example one can explain it starting from the expressions running waters, and dead waters ; or from the literary paradigms of the lake and the river. On the contrary, nuclear landscape, at a local scale, is lived like monuments, without affecting river landscape. But it interacts with the very heavy symbolic system of nuclear power, which affects the exogenous glance. The social acceptance of this large equipment requires to think about lived landscape scheme.

Cowell Richard

Wind power, landscape and strategic planning – the construction of 'acceptable locations' in Wales

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Abstract

Recognising the deficiency of energy policy models driven by abstract calculations of 'technical potential', many analysts argue that decisions about technological choices and targets need to be reconciled with the social and environmental contexts in which technologies are to be adopted. An unresolved issue is how the multi-faceted, spatially-embedded values of landscape might 'jump scale' to figure alongside other considerations like economic efficiency, carbon saving and technical feasibility. To explore the dilemmas of this enterprise, this paper examines the efforts of the Welsh Assembly Government to develop a spatial planning framework for large-scale wind energy. The account examines how landscapes become incorporated into the mechanisms of strategic planning, and the way in which 'acceptable locations' for wind power are constructed. Four sets of findings are discussed: the strategic selectivity with which landscape qualities enter strategic planning rationalities, favouring qualities that are formally designated, mappable and measurable 'at a distance'; the tendency of the identified 'strategic search areas' for wind development to reinforce the marginalised, degraded status of afforested upland areas; the extent to which the planning framework has rendered certain environmental qualities malleable; and the way in which connecting strategic policy to specific spaces may limit the scope for future reflexivity in energy policy. The conclusions call for social researchers of renewable energy and landscape to question their role as 'barrier analysts' for the realisation of pre-given technological scenarios, and consider how their locality-based research on landscape and social attitudes might engage with the core assumptions of energy policy.

Frolova Marina

New attitudes to the impact of energy generation on spanish landscapes: from hydroelectric power stations to new energy landscapes

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This article addresses some key aspects of the evolution of the relationship between landscape, water policy and hydropower in Spain by establishing parallels between discourses on water and hydropower issues. The paper examines the origin of the hydraulic paradigm and its influence on the way hydropower landscapes were perceived. It then shows how the changes in attitudes towards hydropower in Spain are related not so much with the evolution of energy policy or with environmental concerns, but with the changes in the Spanish political panorama (democratization and decentralization) and in its water policy. Finally, through the example of the "River" Law of Galicia Autonomous Community, the article explores a new discourse on hydropower which emerges as a consequence of river landscapes being officially recognized thanks to the implementation of the 2000 Water Framework Directive and the traditional discourse on "national solidarity" being replaced by a new discourse on "regional solidarity".

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Seascape values and offshore wind farm development on the German North Sea coast

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Following a long period of uncertainty, permits have finally been issued for the construction of large-scale offshore wind farms in the German Exclusive Economic Zone (EEZ). With political support for renewable energies still running high, this is a development most regional and national stakeholders have welcomed. At a local level however, opinions on offshore wind farming are divided. Whilst the benefits of the offshore wind industry are indeed considered important – most notably in terms of economic development in rural coastal regions – there is also concern over the potential costs of offshore developments. Most often, these are counted in terms of potential nature conservation impacts of offshore wind farms and damage done to sensitive marine species. They also relate to negative landscape impacts and knock-on effects on tourism, which heavily relies on unspoilt coastlines and an ecologically sound Wadden Sea.

Working as part of the federal research project “Coastal Futures – Zukunft Küste”, our research set out to better understand these specific local positions on offshore wind farming. Using the West coast of Schleswig-Holstein as a case study area, we investigated absolute positions on offshore wind farming and also the reasons local stakeholders give to justify these positions. We were particularly interested in the role of aesthetic landscape qualities in shaping attitudes to offshore wind farming (e.g. the significance of different images of coast and sea) and mental trade-offs between different costs and benefits. Do local stakeholders weigh renewable energies against local jobs and unspoilt landscape, and what deeper values and opinions drive these decisions? We were also interested to what degree attitudes to offshore wind farming were NIMBY-driven (“not in my back yard”). This is based on the idea that there may well be general support for offshore wind farming, but no or limited support of wind farms in the immediate vicinity.

Our approach was to map positions and arguments for a wide range of stakeholders involved in offshore wind farming on the West coast of Schleswig-Holstein. Both institutions and organisations and local residents were considered, with a text-based document analysis used for institutional stakeholders and a questionnaire sent to households in selected local communities. Results show interesting differences between institutional stakeholders on the one hand and local residents on the other, with implications for future use of the sea as a significant source of wind energy.

At the institutional/organisational level, results indicate a broad coalition of support for offshore wind farms across all sectors and administrative levels. Although institutional stakeholders do have concerns, these primarily relate to the technological feasibility of offshore installations, their long-term financial viability or unresolved questions of spatial planning. “Despoilt landscape” and “loss of the open horizon” only rarely feature as an argument.

Landscape, however, and in particular the aesthetic qualities ascribed to the sea, appear to be a significant driver of attitudes when it comes to local residents. About 45% of respondents objected to offshore wind farms, which mostly related to those to be built close by. Half of those objections, i.e. half of all arguments raised against offshore wind farms, were based on the idea that offshore wind farms would threaten the unspoilt seascape and open horizon. This fear goes hand in hand with a highly emotional view of the sea and a strong sense of it as a place untamed. Many residents treasure the intangible spiritual qualities of the sea, expressed in descriptions such as ‘a place to find peace’, ‘great force of nature’, ‘freedom’ or ‘sense of humility’. The sea is synonymous with uncharted territory, with wide, expansive horizons and one of the last truly wild places on earth. In terms of deeper values, correlations were established with images of nature and naturalness, local identity and also quality of life. Not surprisingly, these ideas strongly conflict with images of the sea as an industrial place. Whilst traditional and transient activities such as fishing are mostly accepted, this is not the case when it comes to large-scale permanent structures, which are seen to destroy the very qualities that are considered important. The sense of urgency in protecting the sea is all the more pronounced because many regard the terrestrial landscape as despoilt by wind farms, a fate to be avoided at all costs for the sea.

Visibility of offshore wind farms is a factor that remains ambiguous in this context. Amongst the local residents, there is a group of ‘purists’ for whom industrial marine structures are unacceptable irrespective of their visibility from the shore. This group is convinced that nature should be left to its own devices and kept free of human interference. Another group, mainly composed of mainland residents, argues that offshore wind farms are an ideal alternative to wind farms on land, as long as they are ‘not too intrusive’ and far enough out at sea. This is clearly a NIMBY-type argument of residents not wishing to experience any further development on land. Lastly, there is another group that supports renewable energies as a matter of principle, irrespective of any immediate land- or seascape consequences. Members of this group do have strong images of nature as something to be protected, but are willing to trade unspoilt land- and seascape for safe and climate-friendly forms of energy generation and a chance to redress sea level rise.

The results of the survey show an important difference between the views of the local population and the views of planners and decision-makers. Whilst the former clearly value the open sea as a natural and even spiritual place, institutions and organisations increasingly consider it an abstract extension of the mainland and a place of industrial development. In principle, renewable energy generation is supported by the local population. ‘Seascape’ however is not yet constructed quite like the mainland. It is not an ordered, man-made environment, but rather an unordered and uncontrollable place that is valued as such. At this stage, planning for future landscape-energy relationships needs to bear in mind the symbolic boundary that continues to separate land and sea in the hearts and minds of local people.

Greer Charles

Landscape as Embodied Energy: Perspective on Power Systems of Human Society

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This research presents a framework for understanding landscape as embodied energy, developed to transcend the human/environment dichotomy common in classifying landscapes and landscape features. The framework can be summarized as follows:

Since landscape is a composite product of human and non-human (environmental) forces, and no modern landscape is the product of exclusively human or exclusively non-human forces, we develop a method for identifying and categorizing all features in a landscape by characteristics of energy flow and work, processes common to the operation of human and non-human systems alike.

Landscape producing work is done by energy of two fundamental types: (1) biochemical energy, which does work such as photosynthesis and metabolism to produce biomass, or biotype landscape elements; (2) mechanical energy, which includes geotectonic and hydro-atmospheric forces, but also many animal behaviors resulting in built-type landscape elements that range from burrows, nests, and social insect colonies to the variety of structures humans have created as their capacity has grown to control and put to work escalating levels of energy from the environment.

All built features represent investment for adaptive advantage of part of the energy acquired by a species beyond that needed for demographic survival or increase. Although there are inefficiencies in such investment, comparable to the inefficiencies in trophic energy exchanges, a net gain of matter/energy accrues to the species successfully adapting through a construction process. At least equally important is the net information gain, where information is a measure of structure in the matter/energy exchange. This information gain accounts for the structures—functional and symbolic—which receive so much attention in much of human, or cultural landscape study.

The current paper proceeds from this perspective in two steps. The first is application of the method to a study area in of approximately 100 square Km in Monroe, County, Indiana, USA, which includes a cross section of urban, peri-urban, agricultural, and forest land uses. The application results in identification of 240 landscape features of all types in eleven different categories of feature type. Further analysis reveals characteristics of the features, which cut across traditional categories of ‘human” vs. “non-human,” in terms of their energy characteristics and relationships.

The second step addresses specifically those features of the landscape which are involved with the creation, transmission, and consumption of power (or energy in the more utilitarian sense) for human society, reaching conclusions about correlations among the energy intensity of a feature, its composition of biotype and built-type elements, its relation to other features, and its aesthetic qualities.

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The social place for wind developments

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This paper is based on work undertaken within one of Europe's largest renewable energy research and technology development programme called DOWNVInD. Discussions are based on lessons learned from field work with wind developments on and off shore over a period of seventeen years, concerning public acceptance, methods for public participation and landscape analysis. There is a focus on the potential of landscape analysis as an important tool for SEA (strategic environmental assessment) and public participation. The landscape rise above all details and borders and create the wider both physical and social context required to give over all views, revealing that negative perceptions of wind developments are not primarily connected to specific physical attributes of wind turbines. Landscape analysis can produce representations essential for dealing with the socially constructed nature of perceptions of landscape change.

Krauss Werner

Tracing Assemblies in a Windy Landscape

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The coastal landscape in Northern Germany is a constructed landscape, the so-called Wadden Sea area is the result of the interplay of human and non-human actors. But the overall meaning of this landscape has dramatically changed: Gaining new land from the sea and protecting the land from the sea has been for centuries the common denominator in the construction of this landscape, despite all the political changes in this area. But in the eighties of the last century, the environmental movement established a new discursive regime, turning the seaside into nature and putting it under protection. Only recently, there is another wind of change: The establishment of windparks is the slogan of the day in times of climate change, and it is put into practice (on-shore and off-shore) in this windy landscape.

In my presentation, I will use this ever changing landscape as an example to discuss some of the current approaches to the anthropology of landscape. My focus will be on the assemblies which are characteristic for the administration and construction of this landscape, on their capacity to adapt to new discursive regimes and changes such as global warming. In doing so, I will introduce wind as a constant member of these assemblies, as well as other non-human actors. In tracing these assemblies, I will discuss concepts such as political ecology, systems of knowledge, network, stakeholder and participation, Realpolitik and others in order to create a methodology for doing research on energy and landscapes.

Labussière Olivier

Planning and siting: some theoretical convergences ?

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The rise of industrial wind power development in France since the years 1990 has lead to articulate two logics of action: the former is concerned with the land planning of windmills (planning), the latter with their landscape integration (siting). These two logics differ theoretically and practically as well as in the way in which they conceptualize reality as an object. Planning conceives the geographical space as a stable support guaranteeing the succession of operational methods and the production of an expected result. On the contrary, siting conceives place as a reserve of possibilities able to orientate the course of action. Whereas in France many experiments of windmills landscape planning are coming up on a departmental and infra-departmental levels, we wish to analyze from a theoretical point of view the possible articulations between siting and planning, between respectively a thought of situation and a thought of plan.

The concept of site is subject to recent concerns related to the process of landscape creation. Traditionally identified by geography as a preferential locality for human activities, the site is here conceived as a "transitory condition of the place" (Nadaï, 2005; Nadaï, 2006). Such a conception of the site endows it with a significant degree of plasticity, which makes it relevant for analysing landscapes issues as raised by wind power development. First of all, siting is a way of investing the place while endowing it with an agency in the design activity.

This approach to the place shares commonalties with Anglo-Saxon geography's concept of *place*, which emphasizes as much the materiality of the place as its subjectivity (Entrikin, 1991). In addition, siting proceeds through non-hierarchical process, echoing in this the theoretical renewal operated in the field of design (Rittel, 1972; Conan, 1995). Lastly, because of the gigantism of windmills, siting hustles the reflexion on the role of scales and scale hierarchy in the activity of design. This invites us to distinguish between three types of issues: issues related to proportion (windmill as auto-referential form), issues related to geographical scale (windmills with respect to their environment) and issues related to cartographic scales (windmills as they call for multi-scalar analysis) (Boudon, 1971; Ferras, 1995; Berque, 2000). Taking into consideration these issues, what kind of theoretical convergences might be found between siting and the Anglo-Saxon theories of planning?

The 1950's crisis of Rational Comprehensive Planning brought about a diversification of American planning theories. Among those, two currents deserve consideration because they opened to a greater inclusion of contextual data in planning activity, looking in this way closer to siting.

The first current is made up of the collaborative theories of planning: "social mobilization" and "social learning". While they emphasize the process dimension of design activity, they also display some limits when it come to think conceptualize the role of the context in planning activity. The first theory (i.e. "social mobilization") strongly draws from Habermas and reduces reality to the "lived world": a world that is defined in reference to rational communication (Forester, 1989; Innes, 2004). What ensues is that what does not concern language and the discursive activity, such as the contingent elements of the context, remains in a blind spot (Allmendinger and Tewdwr-Jones, 1998 ; Howe and Langdon, 2003). The second theory ("social learning") is more open to the multiple dimensions of the place. This is particularly the case with its recent interest in pragmatism. However, to the exception of some theoretical works (Friedmann, 1987; Blanco, 1989; Hoch, 2002), contemporaneous American planning shares a diffuse and not criticized pragmatism. While this allows analysts to affirm a right to experimentation, this also entices them to reject theory in favour of practice, falling back on nous as sole principle of action (Bolan, 1980; Sanyal, 2002).

The second current covers theories, which are more directly bound to environmental concerns: "ecological planning" and "environmental planning".

The first type of theory ("ecological planning") suffers, at its beginnings, from a deterministic approach to the man-medium relation: human development must be optimized in conformity with territory biophysical data so as not to disturb the ecosystems (McHarg, 1969; Gold, 1974). Nowadays, data-processing tools and the valorization of quantitative approaches still provide ecological planning with a significant audience. Nevertheless, many stakes raised by siting cannot be dealt within this approach (technician approach, multiscalar analysis badly controlled, simplified vision of dynamic landscape, evacuation of cultural and social dimensions of the landscape) (Ehrlich, 1989; Sheppard, 1993). The second type of theories ("ecological planning") tries to ensure the control of environmental externalities, that are forsaken by traditional planning. One can distinguish between three tendencies in this group (Bouchard, Domon and Gariépy, 1987). The first one is concerned with assessment methods so as to limit the threat externalities might cause to the natural environments. The second one proceeds by integrating externalities into the traditional planning steps, based on the belief that such an integration is likely to modify the construction of the decision – paradoxically, it has been shown that this logic leads to the reproduction of Rational Comprehensive Planning (Healey, 1994). Finally, a third tendency is concerned with environmental externalities through the conflicts between actor that they generate (Susskind and McCreary, 1985). Such an externalist conception results in making the environment into just one field of action among others and does not contribute to substantially modify planning approaches (Hufschimdt, 1971; Wingo, 1983; Faludi, 1987).

In conclusion, theoretical articulations between siting and planning are not very obvious. This is mostly due to planning theories difficulty in conceiving context as a resource for design activity.

Nevertheless, on the margins of the main theoretical debates, Anglo-Saxon planning history displays some challenging works which open tracks for conceptualizing the driving role of the context. This is for instance the case of the "radical concept of planning" (Grasbow and Heskin, 1973), which develops an ecological ethic and conceives action in the betweeness of experimentation and improvisation. Other works emphasise the contingent conditions of action in order to conceptualize planning activity, in particular drawing from chaos theories (Kartez, 1984; Cartwright, 1991). Finally, more recent works deal with multiscalar issues in relation to landscape reflexion (Terkenli, 2005; Smith and Wyatt, 2007).

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Nadaï Alain

Birds, wind and the making of wind-power landscapes in South-France (Aude)

Alain Nadaï & Olivier Labussière

Wind power has recently been taking off in France where it raises a number of issues including its impact on landscape and birds.

Landscape is an important cause of blockage for wind power projects in France as well as in other countries. “Creating wind power landscapes” is an expression used by French institutions such as the National Agency for the Energy as a way to reframe the issue and legitimate wind power. Yet, the question whether wind power might be part of a landscape and what type of landscape it could compose is still at stake. Industrial turbines are big, they can no longer be hidden but wind power technology acquires fluidity as a repetition of turbines, making it composite and modular. In turn, the space made through number, rhythm and display might acquire a contextual dimension reminiscent of landscape. The project works – i.e. referred to as “siting” in what follows - consists of making the technology contextual through group display. It is not necessarily achieved in respect to existing spatial or landscape relations but also by setting new relations, such as ways of compromising on wind resources.

There should be no surprise that the wind dash led to birds, for birds rely on wind as their energy in order to fly. Birds remain a somewhat fluctuant and puzzling issue in recent wind power history. Bird killing by turbines has focused attention and was partly due to critical experiences with badly designed wind power parks (e.g. Tarifa in Spain, Altamont in California). As far as France is concerned, after a controversial take-off the issue seems to have stabilized on a somewhat compromising trajectory. Bird killing is still pointed at by wind power opponents but turbines are less and less pictured as “bird choppers” (e.g. Vent de colère) and the “pro-wind” wing acknowledges the necessity of sharing the “sky”. Birds remain an important issue in the development of wind power projects in many French regions. Disturbance, change or loss of habitats, barriers to movements, cumulative effect of parks and other existing infrastructures are the issues at stake. Green and birdwatching organizations are involved in wind power development. They undertake surveys and studies of impact, a phenomenon through which fixed tariffs are partly converted into an unprecedented production of knowledge about birds. Data bases have been enriched, allowing birdwatching organizations to develop a planning activity. As much as wind, may be more than people, birds have become part of the making of new landscapes of energy through their influence on wind power projects and planning policy.

Taking the department of Aude (Languedoc Roussillon, South France) as a research field, the paper explores birds’ role in the making of French wind power landscapes and policy. After presenting of our materials and method, we introduce Aude wind and describe the development of a wind power project on the Plateau de Haute Guarrigue located in the Parc Naturel Régional de la Narbonnaise (PNRN) (Aude). We first detail birds’ influence on the siting of the turbines, then describe the development of a new birdwatching method which allowed the French bird-protection organization –the Ligue de Protection des Oiseaux (LPO) - to make birds part of project development. Based on this example, the fourth part analyses the ways through which the LPO is involved into French wind power policy and undertaking territorial planning with birds.

Olwig Kenneth

Energy and the Sublimity of Power in the Landscape

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Energy is synonymous with power, as in atomic power, or the power to do work. Yet, there is a subtle difference of nuance because power not only brings to mind the realm of physics and nature, but also the social realm, where the use of power permeates politics, economics and a host of other activities, including the work that human laborers do. Power is thus a source of energy, not just in the physical sense, but also in the social and figurative sense as a driving force in the political and ideological landscape. Power/energy thus has a "hybrid" identity, to use a term taken from Bruno Latour, in that it, as energy, is nature, but, as power, it is social. Landscape shares the "hybrid" meaning of power because it can be used synonymously with nature, as in "natural scenery," and, at the same time, it can be used as an expression of culture or politics, as in "the political landscape." One can, furthermore, go beyond Latour and extend the analysis of hybridity to include the realm of aesthetics and emotions, in-so-far as power also has an aesthetic expression as the sublime (in particular), and in-so-far as landscape is a concept central to the arts, where it has been used to give visual expression to powerful feelings like that of the sublime.

When one examines the interstices between the natural, the social and the aesthetic sublime in relation to power/energy and landscape, one sees a tendency toward what might be termed the "mono-elemental." This is to say, a tendency to focus upon power/energy in the singular, whether we are dealing with the discourse of physics or that of politics. This tendency would appear to be related to the similar characteristic of Western culture, which is to speak of nature in the singular, and to think of religious and political systems in the singular (monotheism, monarchy, the state). This same tendency toward the mono-elemental, I will argue, appears to be related to the way that the conception of the landscape as scenery favors a singular perspective. Power/energy permeate the landscape, yet we tend to think of it in terms of, for example, pure forms of energy, like electricity, rather than, for example, in terms of the energy embedded in the materials with which constructions are built, fields are cultivated and water directed, or in terms of human work and labor.

If landscape is to be "revisioned," to provide a guide to the construction of future energy policy, it is necessary, I will argue, to tease out the ways in which the landscape of "energy," in the physical sense, has become intertwined with that of power, in the social sense, and that of the sublime, in the aesthetic and religious sense. Such considerations are not just of theoretical interest; they also have a bearing upon the concrete landscape politics of energy production and use. The size and placement of, for example, wind turbines or hydroelectric power dams, thus are not just tied to the quantity of energy produced, or the power of the institutions behind the building of these energy structures; they are themselves manifestations of the strategic situation of power that penetrates deeply into the social realms of nature and ideology. In my contribution to the seminar I will explore these theoretical ideas in relation to differing ideas of landscape and differing forms of power, while drawing upon concrete examples of energy and power in the landscape.

Sublime power

The concept of the sublime is interesting because it refers to power and is expressed in the landscape, both in the religious and political sense as well as in the physical and æsthetic sense. The sublime is lofty in conception or expression, grand and exalted, raised to a great height, and it inspires awe. An example that combines these elements of the sublime is the gigantic monstrous crowned figure of an "artificiall man" that towers above the landscape, and who represents the body politic of the state in the frontispiece to Thomas Hobbes' classic 1651 work on the state: Leviathan Or the Matter, Forme, & Power of a Commonwealth." Above the monstrous figure is written a Latin quote from the book of Job in which God proclaims, of Leviathan: "Non est potestas Super Terram quæ Comparetur" (There is no power on earth that compares with him/it)." In the King James Bible the full passage reads: "Upon earth there is not his like, who is made without fear. He beholdeth all high things: he is a king over all the children of pride" (Job 41.33–34 AV). Hobbes here links, in one image, the singular power of a monotheistic God, the power of God's creation as expressed in physical nature (both as manifested by the monstrous

Biblical creature, Leviathan, and in terms of physical height and elevation) and the political power of the state as represented by a crowned monarch and an æsthetic image of power in the landscape.

In the late 1970's, when the Danish wind turbine industry was just getting underway in the wake of major oil crises, a major obstacle to their development was opposition of the public power companies, and the Social Democrat politicians who sat on their boards, to investment in wind turbines, which were seen to be small and inefficient in relation to the development of large scale coal fired power plants which the energy companies favored. Many of the Social Democrats at that time were termed "beton socialister," "concrete socialists" not only because of what was seen to be their stiff and heavy approach to politics, but also, I believe, because of their association with large scale industrial works made of concrete, and the associated form of social organization and power, including the power of a unionized industrial labor force. The nation's towering power plants, with their chimney's reaching to the sky, fit this category, and they were sublime to behold, and like the figure of Leviathan, they combined the powerful sublimity of nature (both with regard to their physical elevation, but also in their ability to produce energy from natural materials) with the power of the welfare state. Electric power provided, furthermore, a particularly sublime symbol of the almost godlike power of the state to enlighten and energize the entire territory under its domain – something Vladimir Lenin captured in his famous statement that "Socialism is the Soviet power plus electrification of the whole country."

Pressure from environmentalists finally coerced the politicians and the power companies to allow private wind turbine owners to sell the electric current they did not consume themselves to the national net. This resulted in an explosion of wind turbine building both for private homes and by local cooperatives – the organization of cooperatives being a Danish tradition. These early turbines were produced by a colorful assortment of private individuals, local smithies and larger firms, and this, in turn, provided the basis by which a few firms gradually became world leaders in the market for producing wind turbines. Wind turbines, or "vindmøller" (windmills), as the Danes call them, also became a ubiquitous element in the low slung and windy Danish physical and political landscape. As long they were owned by your neighbor, or by a local village cooperative, the windmills became an accepted element in the landscape, symbolizing clean energy and giving some rational to the trials of living in a windy environment. The windmills were not popular with everyone, however, the ornithologists, in particular, saw them as a threat to the avian environment.

Today much has changed and a wave of privatization is transforming the production of energy and power from being an icon of the welfare state, to an icon of a neo-liberal state that is verging on becoming a corporate state. In Denmark, the Minister of the Environment, who comes from the Conservative Party, touts huge wind turbines as a means to both reduce CO2 emissions and support the burgeoning Danish wind turbine industry, which has become a major player in the Danish economy. But the wind turbines that the minister promotes are not the household, or village, windmills that built the Danish industry, and which today average about 49 meters in height, but new gigantic turbines that are placed on land or out at sea. The minister has proposed that 1000 turbines between 100 and 150 meters in height be constructed on land in the course of the coming 20 years, plus 37 trial turbines up to 200 meters in height. The household and village turbines, on the other hand, are now stigmatized for their alleged effect in destroying the æsthetic appeal of the landscape and their destructive effect on the natural environment, and it is now difficult to get permission to construct new local windmills. Whereas as 748 turbines were set up as recently as the year 2000, Denmark is now down to 6 this past year. The government argument is now that the way forward is to have fewer, but much larger, turbines. The new turbines are not to be exemplars of household sufficiency or village cooperation, but to be symbols of global Danish industry working in cooperation with a neo-liberal/corporate state. The ultimate power-symbol in this case is the 132 meter high turbine (the world's highest) to be mounted between the twin towers of the Bahrain World Trade Center under the supervision of Danish experts. Not surprisingly, wind turbines have lost much of their status of a popular cause amongst ordinary Danes and organizations have formed to oppose the construction of the large turbines.

Pro- and Con-clusions

Those who are promoting the building of ever larger wind turbines argue that this development essentially expresses a Darwinian law of nature, in which larger machines are inevitably more efficient. The history of the relationship between the aesthetics of the sublime and both religious and state power suggests, however, that something more may be involved. Questions might be well be raised concerning the supposed destruction of landscape values (æsthetic and natural) caused by smaller turbines, just as questions might be raised concerning both the æsthetics and the long term efficiency of the larger

constructions (which have recently been plagued by mechanical problems owing to the extreme gear ratios required by the large turbines). One likewise might question the narrow focus of contemporary environmental authorities upon power generation by wind as the cure-all to contemporary environmental problems, which have largely been narrowed to the cosmic issue of global warming. It is notable, thus, that the giant state owned power conglomerate, which now monopolizes power production in Denmark, and which is undergoing privatization, has become engaged in the production of large scale wind turbines, but at the same time has sought to undermine the production of competing forms of alternative energy, such as heat extracted from the earth. The landscape is a complex energy-scape where roofing materials, insulation and height all effect the total energy budget, but the focus today of the "environmental-industrial complex" is not upon a broad spectra solution to fuel shortages, pollution and global warming, but upon singular solutions to singular problems which stand out in the landscape as symbols of what might be termed "the environmental sublime."

This study will suggest that if the relationship between power and energy is understood as a landscape totality encompassing political/religious, aesthetic and physical dimensions, then it might be possible to make a progress toward a holistic form of energy planning that might have a realistic chance of reducing the world's dependence upon increasingly scarce petro-chemicals, while simultaneously reducing a broad spectrum of pollutants.

Energy is synonymous with *power*, as in atomic power, or the power to do *work*. Yet, there is a subtle difference of nuance because *power* not only brings to mind the realm of physics and nature, but also the social realm, where the use of power permeates politics, economics and a host of other activities, including the *work* that human laborers do. *Power* is thus a source of energy, not just in the physical sense, but also in the social and figurative sense as a driving force in the political and ideological landscape. Power/energy thus has a "hybrid" identity, to use a term taken from Bruno Latour, in that it, as *energy*, is nature, but, as *power*, it is social. *Landscape* shares the "hybrid" meaning of power because it can be used synonymously with nature, as in "natural scenery," and, at the same time, it can be used as an expression of culture or politics, as in "the political landscape." One can, furthermore, go beyond Latour and extend the analysis of hybridity to include the realm of aesthetics and emotions, in-so-far as power also has an aesthetic expression as the *sublime* (in particular), and in-so-far as landscape is a concept central to the arts, where it has been used to give visual expression to powerful feelings like that of the *sublime*.

When one examines the interstices between the natural, the social and the aesthetic in relation to power/energy and landscape, one sees a tendency toward what might be termed the "mono-elemental." This is to say, a tendency to focus upon power/energy in the singular, whether we are dealing with the discourse of physics or that of politics. This tendency would appear to be related to the similar tendency, in Western culture, to speak of nature in the singular, and to think of religious and political systems in the singular (monotheism, monarchy, *the* state). This same tendency toward the mono-elemental, I will argue, appears to be related to the way that the conception of *the* landscape as scenery favors a singular perspective. Power/energy permeate the landscape, yet we tend to think of it in terms of, for example, pure forms of energy, like electricity, rather than, for example, in terms of the energy embedded in the materials with which constructions are built, fields are cultivated and water directed, or in terms of human work and labor.

If landscape is to be "revisioned," to provide a guide to the construction of future energy policy, it is necessary, I will argue, to tease out the ways in which the landscape of "energy," in the physical sense, has become intertwined with that of power, in the social sense, and that of the sublime, in the aesthetic sense. Such considerations are not just of theoretical interest, they also have a bearing upon the concrete landscape politics of energy production and use. The size and placement of, for example, wind turbines or hydroelectric power dams, thus are not just tied to the quantity of energy produced, or the power of the institutions behind the building of these energy structures; they are themselves manifestations of the strategic situation of power that penetrates deeply into the social realms of nature and ideology. In my contribution to the seminar I will explore these theoretical ideas in relation to the differing ideas of landscape and differing forms of power, while drawing upon concrete examples of energy and power in the landscape.

Selman Paul

Learning to love the Low Carbon Landscape

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Whilst certain landscape archetypes seem to be universally appreciated, there are many which we 'learn to love' – in other words, we develop an 'acquired aesthetic'. Some landscapes which are loved by insiders may, in fact, be disliked or feared by outsiders, who neither feel comfortable navigating them nor appreciate their special meanings. The notion that certain landscapes reflect 'good taste' derives mainly from benefits and values attached to them by particular communities of place or interest. The social production of taste associated with landscape is quite slow, and preferences tend to be conservative, often making it difficult for us to accept change. During the 21st century, the rate of global warming may require urgent and far-reaching changes to be made to familiar landscapes, and we may not be able to afford the luxury of waiting for social tastes to catch up – perhaps the acquisition of an aesthetic, and our understanding of what constitutes the 'good landscape', can consciously be accelerated?

Cultural landscapes are produced partly by nature, and partly by socio-economic drivers. Often, they have derived from a 'virtuous circle' of endogenously driven (embedded) socio-economic activity which has drawn upon and contributed to local landscape services. A problem currently faced across much of Europe is that the drivers which produced our distinctive heritage are increasingly obsolete, yet contemporary drivers do not seem to be creating landscapes which are characteristically European or place-sensitive. They are often exogenous in origin and typically produce landscapes reflecting the material representations of corporate values. In the 21st century there will be new drivers, impelled by a growing policy awareness of the need to make a rapid transition to a post-carbon society. These drivers may produce radically different landscapes, whose form is not predictable. For example, the 18th century agricultural improvers in England had no conception of the cherished landscape they were producing – they were simply taking incremental steps to create local energetic efficiencies in farming regimes. We are likely to have similarly profound impacts on our landscape, and we need to be aware of the cumulative visual and functional consequences of our policies and practices.

Landscapes acquire their aesthetic to a large degree from their underlying stories, which contribute to a strong sense of place-identity. Sometimes, this results from the grandeur of nature – a storyline of our humility relative to forces powerful beyond our imagination. Such landscapes are relatively rare, especially in the more populous areas. More often, stories are associated with the blood, sweat and tears of generations who have worked, loved and relaxed in their places and pathways, creating enduring 'associative' qualities. This is particularly true of the cultural landscapes of Europe. The dominant metanarrative of the 21st century will be 'sustainability', and particularly our ability to reduce our carbon footprint. This will manifest itself in three particular ways:

- embodied energy – for example in our new agricultural technologies which may emphasise relocalisation, ethics, traceability and reduction of food miles; in housing construction and design; in the establishment and maintenance of green infrastructure; and in the blue infrastructure associated with taming the flood.
- energy production – for example through new crops, revitalisation of local woodfuel sources, turbines and river regulation.
- energy consumption – particularly in relation to transport, which may reflect itself in telecommunications infrastructure installed to reduce the need for face-to-face business meetings, and compact or linear settlements to facilitate efficient movement.

All of this will produce radically new cultural landscapes, not all of which will be attractive, but which reflect the collective story of the new Europe. There is evidence to suggest that some of the resultant agricultural paraphernalia, housing styles and land drainage are at variance with polite tastes. However, they may well be perceived as having a compelling storyline which resonates with people's underlying values, and thus help us to 'acquire an aesthetic' and take pride in the contribution that our own places are making to justice and sustainability.

Van den Horst Dan, David Toke

Exploring the relationship between social and physical landscape characteristics and the outcomes of wind farm siting processes in the UK.

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In recent years there have been a growing number of studies on the public perception of renewable energy and public opposition to specific plants. Several of these studies have sought to contextualise the nature of the opposition, for example by drawing attention to the existing landscape perceptions of the area or the social characteristics of local communities. Van der Horst (2007) reports how a developer of biomass energy was using social siting criteria which amounted to the targeting of communities where organised resistance was expected to be low. Similarly, Toke (2005) found that some wind farm developers were deliberately avoiding 'chocolate box' villages where they expected resistance to be particularly high. These observations raise questions about environmental equity. Environmental equity first came to prominence as a racial and urban issue in the US. In recent years it has reached the UK where the research has focused on finding statistical correlations between poverty indicators in local communities and the occurrence of pollution (FoE, 1999; Walker et al., 2003) or exposure to flooding (Fielding and Burningham, 2005). Although some clear correlations have been found, these do not necessarily constitute causal links (Petts, 2005). Another problem is that, when the local source of environmental risk has been in place for a long time, some types of likely causal links may not necessarily be portrayed as environmental inequalities. For example, low house prices near industrial areas or along motor ways may attract less affluent newcomers who are knowingly choosing to put up with the nuisance or pollution. The causal link between poor environment and low income in this case is the result of 'free' choice. There is certainly inequality in this example, but it is primarily income inequality rather than environmental inequality per se. Environmental inequality is more clear cut when new facilities is sited on the 'poor side of town' (Owens, 2004) so that existing inhabitants of deprived areas are being exposed to new environmental risks. Observations by Toke (2005) and van der Horst (2007) in the UK provide anecdotal evidence that some of the siting of new renewable energy facilities similarly ends up on 'the poor side of the countryside'. These observations are further strengthened by (qualitative) literature on levels of efficacy in more affluent communities and the 'aspirational ruralism' of middleclass urbanites moving into more rural areas (Woods, 2003). Rural areas are not homogenous however and more iconic or scenic landscapes tend to be better protected by law[1] and more valued by affluent incomers so that environmental capital and financial capital can be spatially correlated and potentially better protected against proposed renewable energy facilities. However to date there have been no studies which sought to provide quantified evidence of environmental inequity in the siting of windfarms.

The aim of this paper is to explore the relevance of the environmental equity debate with regards to windfarm siting decisions in the English rural landscape.

The study is informed by a statistical analysis of correlations between community and physical landscape characteristics on the one hand and the planning and siting of windfarms on the other. This analysis is relevant to the wider environmental equity debate because both the windfarms and the socio-economic data are recent so that the usual 'chicken & egg' conundrum (i.e. what was there first – the plant or the disadvantaged community) does not apply. Furthermore, the analysis does not only concern existing locations but the actual siting decisions. These are assessed with respect to three different decision making levels; site selection by companies, planning decisions by local councils and planning decisions on appeal. The role of social and physical landscape indicators as possible predictors of the outcome of these decisions is discussed.

[1] In the UK legal protection of landscapes includes designations such as National Parks, Areas of Outstanding Natural Beauty, Heritage Coasts, Scenic Areas and Sites of Specific Scientific Interest.

Van den Horst Dan / James Evans

The political ecology of biomass energy crops in the UK

James Evans
Dan van der Horst

The greatest proportion (83%) of renewable energy in the UK is derived from biomass. Despite this there has been little debate over the potential landscape impacts of biomass, and the sector is characterised by considerable levels of uncertainty. This paper explores the ways in which biomass is framed within the carbon debate, interrogating the trade-offs and conflicts surrounding the production of dedicated and subsidised energy crops. Drawing upon a political ecology framework, we seek to explore the difference that a specific energy crop, Miscanthus, makes in current debates over bioenergy. We outline how the ecology of the plant plays a critical role in structuring the political, ecological and economic adoption of biomass, focusing on its status as a so-called 'alien' species that is foreign to the UK. Taking a case study of a Yorkshire landscape long dominated by coal, we explore the context of recent developments in biomass energy. Through this case study we explore how the uncertain ecology of Miscanthus undermines claims concerning the economic viability of biomass, and trace how the potential production of an 'alien' landscape creates a series of social and ecological tensions. The paper concludes by reflecting upon the political ecology of carbon, suggesting that the example of biomass highlights the way in which carbon tends to be fetishized, or removed from its social and ecological context, within current energy debates.

Warren Charles

Three Dancing Ladies or blots on the horizon? The influence of windfarm ownership on public attitudes to wind energy in western Scotland

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This case study explores public attitudes to - and perceptions of - onshore windfarm development in south-west Scotland. Specifically, it examines the influence of different development models on attitudes to windfarms in the region surrounding Scotland's first community-owned windfarm.

The onshore wind power sector is expanding rapidly in Scotland (67% in 2006), encouraged by strong policy support at both UK and Scottish levels. Despite strong overall public support, the speed and scale of this expansion has triggered significant opposition motivated primarily by the perceived impact on 'natural' landscapes. Hitherto, the development approach adopted throughout Scotland has been the private developer/public funding model, an approach criticised as a primary factor driving public opposition. Critics contrast it unfavourably with the community ownership model widely practised in some EU states (notably Denmark and Germany), arguing that local share ownership produces more active patterns of local support and is more equitable. Until recently, this hypothesis could not be tested in Scotland because no community-owned windfarms existed. This pilot study reports the first investigation of public perceptions of a community-owned windfarm on the island of Gigha, and compares them with attitudes on the adjacent Kintyre Peninsula where several large (>15MW) commercial windfarms exist.

Following a high-profile community buy-out in 2002, the Gigha community immediately started developing a small (0.7MW), 3-turbine windfarm which was commissioned in 2005. In the autumn of 2006 we carried out a questionnaire-based survey (n = 106) of public attitudes to windfarms amongst communities on the mainland and the island. The primary aim was to test the hypothesis that community ownership would lead to greater public acceptance. Additionally, we explored the perceptions of both residents and tourists concerning the impacts of onshore windfarms on landscapes and seascapes, including the cumulative effects of multiple windfarms. The questionnaire data were supplemented with semi-structured interviews with five key stakeholders.

The data show that Gigha residents are consistently more positive about wind power generally and local windfarms specifically than are Kintyre residents, but the differences are not large. For example, 79% on Gigha and 65% on Kintyre support increased local wind generation, and when asked about their greatest concerns, a higher percentage on Gigha registered no concerns at all (48% v. 32%). Intermittent production and visual impact emerge as the most significant worries about windfarms, but majorities in both Gigha (63%) and Kintyre (52%) regard their visual impact as positive; only 8% and 16% respectively view them negatively. Indeed, on Kintyre where the cumulative impact of existing and proposed developments might be expected to generate negative attitudes to new windfarms, and where a quarter of respondents are able to see turbines from their homes, 65% support more windfarms in the area and only 13% are against. Familiarity with windfarms in the landscape seems to breed contentment.

Tourists expressed a range of concerns about windfarms; almost all had seen them during their visit. Nevertheless, 95% said that their existence would either have no bearing on the likelihood of their making a return visit or would make them more likely to return, a result which undermines frequent claims that windfarms will damage Scottish tourism.

Overall, then, perceptions of windfarms in the region are strongly positive. Nevertheless, a striking result is that local attitudes could become even more positive if future windfarms were owned by local communities. In Kintyre, 45% of residents would be more supportive of a new windfarm if it was community-owned, and in a mirror-image finding on Gigha, 65% said that their support for a new

windfarm would decrease if it was commercially owned. The positive psychological effect of community ownership is tellingly revealed in the affectionate nickname given by Gigha islanders to their turbines: the 'Three Dancing Ladies'. This contrasts radically with opponents' branding of Kintyre windfarms as 'rape' or 'desecration' of the landscape. These results support the long-held supposition that a change of development model could greatly increase public support for windfarms in Scotland.

Wolsink Maarten

A large near-shore wind farm in the Netherlands' Waddensea: Policy underestimating the nature and significance of 'seascape' concerns among the public and civil society.

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In contested wind farm developments, the dominant dialogue is about scenic impact and landscape character. A proposed simple solution to avoid all complexities in wind farm development is that siting wind warms offshore could solve the problems encountered onshore. This is far too simple, for various reasons. The main reason is that siting issues offshore are just as relevant as onshore. Although they may become manifest in different ways, since most examples of off-shore developments actually concern near-shore wind farms, the main dialogue is still about visual aspects and impact on 'sea-scapes' as perceived by the public. The number of large wind power schemes that have failed is growing (e.g. Firestone and Kempton 2007).

The case analysed here is a near shore wind farm in the Netherlands that should have been built alongside the 32 km *Afsluitdijk* (causeway), separating the WaddenSea from the former Zuiderzee (Southern Sea, now lake IJsselmeer). In 2001 this largest wind scheme ever (278 MW) failed because the government refused to negotiate with civil society organisations representing various landscape values, primarily with the Wadden Vereniging and its allies.

An analysis of the wide range of landscape characteristics and values in the region will be given. These concern areas with significant nature, ecology, cultural heritage, significant for tourism, for rural development etc. Some of these have high identification values for different sections of society. The rating of acceptability and the assessment of different qualities in relation to wind farm siting will be analysed using data from sample survey among members of the WaddenVereniging, the national environmental organization for the protection of the Wadden region. Most members think that there are suitable sites for wind turbines indeed, in the sensitive area like the Wadden Sea. However, the final scheme that was proposed by the authorities and the power company was based on a landscape assessment of the governmental architect. This assessment was highly technocratic, supported the top-down decision about the design and it fully neglected the landscape preferences among the public and the Wadden Vereniging (Wolsink, 2007). This decision evoked its opposition, and eventually, the Wadden Vereniging succeeded in generating national political support for its resistance.

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