

VoSBrief

Views of Scotland Briefing Paper no 5, March 2004

The Executive's forty per cent 'renewables' target has no strategy to back it. It is a Strategic Policy Vacuum.

IEWS OF SCOTLAND (VoS) submitted a paper called 'A Walk in the Dark' to the Scottish Parliament's Enterprise and Culture Committee Renewable Energy Inquiry in January 2004. It is reproduced here, slightly edited. Founded in June 2002, VIEWS OF SCOTLAND (VoS) represents over 43 community groups throughout Scotland. It campaigns for a secure, sustainable energy policy that respects the rights and aspirations of all citizens.¹

A Walk in the Dark

Views of Scotland is alarmed that Ministers have embarked upon ambitious proposals to replace 40 per cent of Scotland's electricity system absent any competent strategy.

It anticipates that under present arrangements the vast majority of new renewables generating capacity is likely to be onshore wind for the foreseeable future.

VoS draws the Committee's attention to the fundamental dichotomy of energy policy as a Reserved Matter with renewables policy as a Devolved Responsibility. Renewables are not independent of the electricity system as a whole: this botched division of powers frustrates effective strategic decision-making and cannot be justified. VoS recommends that this incongruity be resolved as a matter of urgency.

The Executive has given effect to its renewables policy indirectly via a substantial levy called the Renewables Obligation (Scotland) (ROS). The ROS

subsidises renewables by financial instruments called Renewable Obligation Certificates (ROCs). The net result is that consumers pay a stealth tax direct to the electricity industry.²

VoS acknowledges that private enterprise has a contribution to make to renewables. Nonetheless, it believes that experience already shows that the Executive has misplaced confidence in the ability of a subsidised market alone to guarantee success.

Ministers seem to expect that an electricity system can be cobbled together by private developers driven by the incentive of ROS subsidy on the one hand and the happenstance of willing landlords and easy grid connection on the other. Issues such as technology balance, transmission losses, security of supply or cumulative environmental impact are not considered in any of the official publications.

The Executive has variously argued that no strategy is required because renewables developments are always local and, in the

The main points at a glance

- Ministers have embarked upon ambitious proposals to replace 40 per cent of Scotland's electricity system but they have no overall strategy. They hope that an electricity system can be cobbled together by private developers driven by lucrative subsidies chancing on willing landlords and easy grid connections.
- Issues such as technology balance, transmission losses, security of supply and cumulative environmental impact are ignored. Known security issues arising in Denmark and Ireland are ignored.
- Changes on the scale envisaged will have far-reaching social and economic consequences for which the Executive has no contingency plans. This is truly A Walk in the Dark.
- VoS calls for a Scotland-wide Strategic Environmental Assessment (SEA) to inform an effective strategy like those conducted for the Thames, the Wash and the Solway. An uncontrolled wind-rush poses significant cumulative risks to public health, peatland carbon reservoirs, protected raptors, property values, the tourism economy and tourism employment.
- The Executive's over-reliance on a single 'renewable' breaches Article 3 of the UNFCCC and Article 2 of the UNFCCC Kyoto Protocol. These commitments cannot be properly met without SEA.
- Prospects for emissions cuts from wind are poor, mainly due to essential backup plant that pollutes even when not generating - Denmark has the greatest Kyoto deficit of any EU state and its emissions are rising.
- The idea that a wind rush is a necessary prerequisite for the development of other renewables is absurd. VoS calls for an SEA to investigate alternatives, especially tidal power, and asks why resources are being squandered on a low-quality duplication technology (wind) when a high-quality replacement (tidal) is ripe for development.
- NPPG 6 and PAN 45 are obsolete and rely on discredited research. They offer inadequate guidance on noise, landscape impact, proximity, wildlife protection and damage to tourism.

alternative, that a strategy exists because NPPG 6 advises local planning authorities to identify broad areas of search for wind-power sites.

However, any reasonable person would conclude that replacement of 40 per cent of the electricity system is likely to have substantial greater-than-local consequences and, since there is no collaboration amongst local planning authorities, it is likewise obvious that separate, locally-defined search areas do not add up to a coherent national strategy. In our view, ministerial buck-passing is not a satisfactory substitute for strategic planning – not least because ministers determine all Section 36 consents and all Section 37 line consents themselves.

Electricity is a key infrastructure industry which, by definition, requires a strategic overview. VoS draws the Committee's attention to the disruption evident in another strategic infrastructure industry, rail transport, which has suffered from a similar breakdown in strategic planning. It asks the Committee to note widespread anxiety in the engineering community and predicts that the social and economic consequences of any failure of electricity supply will be far more serious than the case of rail transport.³

Eire . . . with a wind penetration of less than seven per cent, has a moratorium on new wind-power for reasons of stability and security of supply.

The Scottish grid is poorly integrated with Europe and has many of the characteristics of an island grid. As existing generating plant is retired in the future, serious engineering questions remain about the capability of randomly-intermittent wind power to provide a stable and secure supply at the level of penetration contemplated.

Denmark has a wind penetration of about 18 per cent but, despite the advantage of being well integrated into the wider European grid, continues to suffer from grid instability.

Eire, an island grid with a wind penetration of less than seven per cent, currently has a moratorium on connection of new wind-power for reasons of stability and security of supply. VoS is not aware of a successful precedent for an island grid with the levels of intermittent wind generation currently under consideration and yet ministers have no contingency proposals.

In the absence of any competent strategy, VoS insists that the Executive's proposals are a walk in the dark.

At the very least, achievement of its ambitious

targets must remain in doubt. Of more pressing concern are the significant risks of widespread interruption of supply and of severe price inflation which have the potential both to harm the Scottish economy and to increase hardship and fuel poverty. Gambling with the well-being of our senior citizens is not acceptable under any circumstances and taking such risks is inexcusable when they may be easily mitigated by proper attention to strategy.

The UK has already exceeded its emissions reduction commitment under the Kyoto Protocol . . .

It is our submission that ministers' failure to accept strategic responsibility for this key industry raises serious questions of competence and judgment. Consequently, VoS recommends a moratorium on all new renewables developments and on all piecemeal tinkering with the electricity system until ministers exhibit a competent strategic plan that includes satisfactory provision for contingency and security of supply.

VoS notes both that 40 per cent of supply from renewables is far in excess of any external renewables target to which the Executive or UK Government is currently subscribed, e.g. Directive 2001/77/EC and that the UK has already exceeded both its eight per cent emissions reduction commitment under the UNFCCC Kyoto Protocol and its 12.5 per cent commitment under Council Decision 2002/358/CE.⁴

VoS therefore firmly rejects any suggestion that delays incurred in developing a competent strategy might precipitate significant default of international treaty obligations. On the contrary, it emphasises the benefits to sustainable development of a careful and considered approach to energy policy.

The Executive's ambitious renewables proposals are domestic targets only and have no basis in any considered feasibility study. They were ramped up to these heady levels as a result of 'greener than thou' posturing by parties vying for perceived political advantage in a new but, with respect, immature parliament.

In any realistic scenario, these targets will not be met. VoS does not doubt that they were originally intended to save the planet: it would be tragic rather than ironic if Scotland suffered unnecessary damage in a wind rush intended to save political face.

Strategic Environmental Assessment (SEA)

VoS does not regard a walk in the dark as sustainable development – it recommends that a Scotland-wide Strategic Environmental Assessment

(SEA) be undertaken in order to inform a coherent and effective strategy.

By engaging citizens in a constructive dialogue at an early stage, SEA would engender a sense of ownership, build consensus and help rebuild public confidence in renewables: it is an opportunity for mediation. VoS also notes that planning guidance now exists to advance this process and to articulate its results and that SEA will be mandatory after July 2004.⁵

The Thames, the Wash and the Solway all enjoy strategic assessment but Scotland is considered undeserving of the same sustainable development.

In particular, there is an urgent need to assess the cumulative environmental and socio-economic impacts of the large number of onshore wind proposals that are already approved or in the planning process. VoS is acutely aware of significant cumulative risks to, inter alia, peatland carbon reservoirs, protected raptors, property values, the tourism economy and tourism employment.

VoS does not understand why the Thames, the Wash and the Solway all enjoy SEA for offshore renewables proposals but Scotland's people and terrestrial environment are considered dispensable or undeserving of the same level of sustainable development.

Indeed, the Robin Rigg proposal was denied a public inquiry on the spurious ground that the local Scottish Planning Authority's jurisdiction did not extend below low-water mark.

VoS questions the Executive's over-reliance on renewables in view of the fact that ministers' stated ambition is to influence the global climate via control of greenhouse gases.

It draws the Committee's attention to (a) Article 3 of the UNFCCC: that measures designed to control

the climate should be comprehensive, cover all economic sectors and all relevant sources, sinks and reservoirs of greenhouse gases and should be delivered at the lowest possible cost and (b) Article 2 of the UNFCCC Kyoto Protocol: the adverse impacts of measures designed to control the climate must be minimised. It is at a loss to see how these commitments can reasonably be met absent SEA.

VoS further recommends that, in order to identify the most cost-effective and best environmental solutions, SEA consider all significant sources, sinks and reservoirs of greenhouse gases, including emissions arising from transport and land use, all impacts, including those upon socio-economic and natural heritage interests, and the full range of potential mitigation measures including energy conservation.

The Opportunity Cost of a Walk in the Dark

Over and above the significant risks of environmental and socio-economic damage inherent in piecemeal and unsustainable wind-power development, there is a substantial opportunity cost.

This is not the place for a comparative discourse on renewables technologies. Suffice to say that, of the technologies likely to be deployed on a large scale, wind is the least effective in the medium or long term.

It suffers from low energy density, inability to store energy, random intermittency and a finite probability of common-mode failure.⁶

Consequently, wind power must be deployed very extensively and with a disproportionately high environmental impact. It must always be matched by 100 per cent backup capacity in case of common mode failure as well as continuous real-time backup to accommodate random intermittency.

It is an option for duplication rather than replacement – in particular, it can never replace a single nuclear or thermal power station. It is truly the lowest quality of all renewables and the most

Other VoS Briefs in the series ...



expensive when costs of duplicate plant and backup nuclear and fossil fuels are included.

Despite the industry's inflated claims, the prospects for emissions avoidance using wind power are not impressive mainly due to the backup plant that is generally polluting even when not generating (i.e. on hot stand by).

Denmark has the highest penetration of wind in the European Union and yet has the greatest deficit of any member state in its Kyoto commitments – and its greenhouse gas emissions are rising.⁷

It appears that the only thing the Danes have cornered is wind turbine manufacturing and the prospects for Scottish enterprise are not good due to their dominant position.

Contrast this with, for example, tidal power. This has a high energy density and is predictable. There will not be common-mode failure while the earth turns and the sun and moon are in the sky.

It is, it is true, (predictably) intermittent but the UK enjoys a tidal flow around its coasts that is staggered in time and location. With intelligent deployment, certainly within the wit of Scottish engineers, it is a replacement technology with genuine ability to avoid greenhouse gas emissions and replace nuclear generating capacity.

The manufacturing field is open to all comers, with no already-dominant market player, and it is an offshore industry – a new addition to a sector in which Scotland is a world leader.

VoS rejects the absurd proposition that a wind rush is a necessary prerequisite for the development

of other renewables technologies. On the contrary, an environmentally-damaging and ultimately-ineffective deployment of wind power will only alienate the public from the concept of renewables and choke off investment vital to the development of superior alternatives. No monopoly has ever worked to the advantage of emergent competitors.

All generating technologies incur adverse environmental impact and tidal power will be no exception. However, when the technology achieves a maturity comparable to wind power now, VoS anticipates that these will be more localized than wind power due

to the higher energy density of water and its implications for less extensive deployment of plant.

In any case, the wind alternative certainly incurs extensive adverse environmental impact for the dubious advantage of a third-rate duplication technology.

Whichever technology eventually dominates, replacement of 40 per cent of the electricity system with more expensive renewables generation plus the substantial grid reinforcement will not be cheap. It is therefore vital that investment on such a scale be guaranteed long term success – voters will not appreciate being gouged for a third-rate electricity system. VoS can only conclude that the current folly of wind power is encouraged by the ROC subsidy and the lucrative short-term profits it hands to private developers. It is a classic short-term vision of unsustainable development, the consequence of a walk in the dark.

Denmark has the highest penetration of wind in the European Union and yet has the greatest deficit of any member state in its Kyoto commitments – and its greenhouse gas emissions are rising.



ScottishPower's 30MW Beinn an Tuirc wind site in Argyll, opened in 2001 by then Energy Minister Brian Wilson.

VoS questions why the limited resources of the nation are being squandered on a low-quality duplication technology when a high-quality replacement technology is ripe for development. As already noted, the UK's Kyoto commitments are already met and Scotland is in the enviable position of being able to look to the long term and practice sustainable development rather than subsidise a piecemeal, unsustainable and ultimately futile wind rush. There is a powerful and reliable work horse available if Scotland has the patience to train it and put it to the plough yet ministers seem to be in a hurry to leap on a donkey.

VoS recommends that resources that would be squandered on a wind-power monopoly be diverted to technology development and Strategic Environmental Assessment relevant to renewable technologies that are capable of replacing nuclear power and avoiding greenhouse gas emissions. In particular VoS recommends that research into tidal power and into its environmental impact be given a high priority.

Inadequate Planning Guidance

VoS considers that NPPG 6 and PAN 45 are out of date and fail to address a number of serious public concerns.

Public Attitudes: Both NPPG 6 and PAN 45 explicitly cite the Executive's Public Attitudes to Windfarms in Scotland research in support of their planning guidance and advice – but this research has been discredited and withdrawn.

Its replacement should have identified any problems experienced by those living close to the sites. Instead, with the effect of rationalizing post hoc the conclusions of a discredited survey, ninety per cent of those questioned were drawn from areas between 10km and 20km away – only 12 per cent of whom could see a turbine from their homes. At a third of the sites, nobody who lived nearer than 5km was questioned.

These documents provide a constant and painful reminder of the very low quality of the Executive's wind power research and seriously undermine confidence in the planning system. VoS recommends that the Executive's second public attitudes survey should also be withdrawn.

Noise: The Executive's wind-power noise advice is based on ETSU-R-97, which is now outdated. It does not consider very low frequency noise and its own authors recommended review by 1998. The basic methodology has been challenged by recent research from Groningen University amongst others and VoS believes there is a clear room for

improvement. In addition, VoS draws the Committee's attention to recent research by Dr. Amanda Harry concerning significant observed health effects considered to be due to low frequency turbine noise.⁸

Given the extent of wind power development contemplated in close proximity to settlements, VoS considers that Ministers' failure to commission research into the potential health effects of wind turbines amounts to a want of care for Scottish communities.

VoS recommends that a precautionary program of research be initiated forthwith to investigate the potential health effects of low frequency wind turbine noise and shadow flicker.

Proximity to Settlements: Of particular concern to VoS is the issue of proximity of developments to human settlements. There is ample land in Scotland that is remote from habitation and VoS does not understand the necessity for wind-power sites to be so close to communities.

We are alarmed by the cavalier attitude expressed by members of the mainstream environmental lobby and the Executive that wind turbines close to cities are particularly desirable since they serve as a constant reminder to the general public of the price of energy consumption. The voting public should not be used as guinea pigs. This unnecessary damage and threat of damage to amenity has provoked widespread unease and a distrust of wind power which has the potential to frustrate the Executive's targets. VoS predicts that this public unease will continue to spread and deepen as more poorly-sited proposals are disclosed.

VoS recommends that as a precaution a minimum separation of at least 5 km between large wind turbines and habitation be established forthwith, pending the results of research into potential health effects and consultation with local communities.

Visual and Landscape Impact: The rapid increase in the size and number of turbines on wind-power sites also increases visual and landscape impact. Since the publication of NPPG 6 and PAN 45, turbines of 100m and higher have become commonplace and there is a pressing need to update the visual and landscape impact advice to planners. VoS notes the analysis by the University of Newcastle and Scottish Natural Heritage that indicates widespread, significant and systematic visual misrepresentation of wind sites in developers' pre-construction literatures.⁹

Consequently, VoS recommends that visual and landscape impact planning guidance be updated to

reflect modern wind turbines and that the wind industry be subject to independent regulation in order to eliminate systematic visual misrepresentation in the planning process.

Flora and Fauna: Current planning guidance provides insufficient protection for flora and fauna. There is a designation-based approach which presumes that all significant flora and fauna assets are already designated despite clear evidence that survey information in Scotland is incomplete. Insufficient local authority and SNH resources to assess properly the value of flora and fauna at the site of each proposal aggravate this situation: indeed, many local authorities have no independent capacity whatsoever to assess such issues. Consequently, many decisions are made on the basis of extant designations and on the partial opinion of developers' paid consultants only. VoS is concerned by the variable quality and methodology of developers' assessments and is currently engaged in systematic research into the issue.

VoS has particular concerns that the impact of wind power on protected birds and bats is not being adequately assessed and that planning guidance provides insufficient protection to the affected species. In addition, VoS is concerned that many wind power developers are targeting peat bogs. Peat bogs are highly significant and protected carbon reservoirs and the UK is committed under the UNFCCC Kyoto Protocol to protect and enhance these assets yet there is no advice whatsoever on this matter in planning guidance.

VoS recommends that planning guidance be updated to reflect the risk to protected bird and bat species and that the UK commitment to protecting peat bog carbon reservoirs be given due weight. VoS also recommends independent regulation of the wind industry in order to establish professional standards of flora and fauna impact assessment.¹⁰

Tourism: Landscape is a key asset underpinning Scotland's largest industry. Tourism is also Scotland's largest employer and provides disproportionately high opportunities for youth and female employment in rural areas. It is given insufficient consideration in planning guidance and the Executive's failure properly to research the impact of wind power on rural tourism amounts to negligence.

VoS draws attention to the lack of credibility in wind industry claims that turbines are a tourist attraction. Even the oft-cited but much-subsidised English visitor centres of Delabole, Cold Northcott and Swaffham have experienced severe financial difficulties including insolvency and receivership.

VoS also disputes that the BWEA/SRF tourism survey conducted on just two weekends in September 2002 was representative of the tourist population visiting Argyll.¹¹

In contrast, VoS is aware of a number of qualitative studies and proxy indicators that indicate significant adverse impact of wind-power sites on tourism. In particular, it notes that the 2002 VISITSCOTLAND study found substantial visitor aversion to wind-power sites. VoS's own analysis of the VISITSCOTLAND results indicates a potential for job losses of between 3,750 and 6,250 and a revenue loss of between £80 and £140 million per year to already economically-fragile rural communities.¹² As a proxy indicator, VoS notes that an English court has ruled that a house price devaluation of 20 per cent was due to a nearby wind turbine.¹³

VoS recommends that further research into the impact of tourism be commissioned and that, pending results, a precautionary approach to the adverse impact of wind power on tourism be adopted.



AMEC's 3-turbine site at Elwick, near Hartlepool. The nearby digger suggests the scale (2.75MW NEG Micon, 100m tip ht.)

Consensus Guidance: In contrast to more progressive local Agenda 21 initiatives such as Community Planning, the Executive has continued with its high-handed approach where its own planning advice and guidance is concerned. As with SEA, there is a positive opportunity to engage with citizens and involve them in developing new and more consensual planning guidance and advice for renewables developments.

VoS requests that the Committee strongly recommend to the Executive the advantages of public participation in preparing planning guidance and advice.

Conclusion

VoS has briefly touched upon a range of issues of serious and immediate concern to our membership and thanks the Committee for this opportunity to participate in the Renewable Energy Inquiry. VoS would welcome an opportunity to answer questions and further expand on these issues in a hearing before the Committee.

The wise man's eyes are in his head; but
the fool walketh in darkness
Ecclesiastes 2.14.



Notes

- 1 www.viewsofscotland.org.
- 2 See e.g. *The ROC Scam*, VoSBrief 2, 2003. Available on www.viewsofscotland.org.
- 3 See, e.g. consultation responses to various recent UK and Scottish energy policy proposals from The Royal Academy of Engineering, The Institution of Electrical Engineers, The Institution of Civil Engineers and The Institution of Chemical Engineers.
- 4 See www.statistics.gov.uk/TATBASE/Expodata/Spreadsheets/D4854.xls. UNFCCC – United Nations Framework Convention on Climate Change.
- 5 Directive 2001/42/EC.
- 6 Common mode failure – the absence of resource in common, in this case wind across the whole country. It happens regularly, perhaps once a year across the UK for several days at a time, and is associated with high pressure weather systems. On a regional level, such as across Scotland, common mode failure is far more frequent.
- 7 See www.eea.eu.int.
- 8 VoS has not had opportunity independently to corroborate this research but notes similar research by Dr Bridget Osborne (now submitted to the Royal College of General Practitioners) and ongoing research into health effects of low frequency turbine noise by DEFRA and Salford University. At the least, VoS submits, there is a case for precaution.
- 9 '6.1.18 ... Certainly our case-study analyses confirm a widespread belief that photomontages almost always underestimate the true appearance of a windfarm from most viewpoints' – University of Newcastle (2002) *Visual Assessment of Windfarms Best Practice*, SNH Commissioned Report F01AA303A.
- 10 In at least one case the same consultancy has been contracted to prepare an EIA and to evaluate it for SNH.
- 11 VoS research report in preparation.
- 12 *Turbines and Tourism Jobs*, VoSBrief 3, 2003. Available on www.viewsofscotland.org.
- 13 Moon and Another v. Pointing and Another, Blackpool County Court, 2000 (unreported).

A taste of things to come? Turbines in once-spectacular scenery in Catalonia.