SUBMISSION FROM JOHN W MACKAY

Introduction

1. I offer some comments below to the above inquiry. I do so as an individual, based on my experience of onshore wind development; and I am the author of the document ‘Scotland’s Beauty at Risk’, which raises the issue of damage to Scotland’s landscapes from unbridled expansion of on-shore wind power development. My comments focus mainly on this issue, as a good number of the other technical questions raised in the briefing for this inquiry are for others to offer advice. On-shore wind power is the most contentious element in what is otherwise a commendable approach by the Scottish Government to shift energy use away from fossil fuels, but on-shore wind development is likely to be the main component in the achievement of the 2020 targets.

Targets

2. The two Renewables route/road maps – the Scottish and the UK versions – provide the main starting points to any debate about targets and their achievability. A number of uncertainties govern whether (and how) the 100% electricity-consumption equivalent target can be achieved by the due date of 2020. These include resolution of funding for the scale of investment needed for off-shore wind, and delivery on the other necessary elements of this kind of development, such as connection to the grid; there are the development challenges inherent in the introduction of new technologies for harnessing tidal or wave power; and there is a challenge to achieving high uptake on energy-saving schemes that depend on changing public attitudes. There is also uncertainty about the level of electricity use by 2020. The Scottish route map acknowledges that the 2020 target is challenging.

3. There are several main options for electricity generation, but the major components of conventional present-day generation – coal, gas and nuclear – will all have to be more or less phased out; however, it seems to be acknowledged that some ‘clean-technology’ thermal generating capacity will be needed as base-load and safeguard against loss of power from renewables – especially wind at periods of low output. It is the Scottish Government’s projection that reaching the 2020 target will require the order of 16GW of installed renewables capacity, that is about four-fold increase on what is currently visible – mainly on-shore wind and hydro. But of the main renewables technologies, hydro-power and biomass have resource limitations, and wave power and tidal power will also not be big contributors, being young technologies. All of these lesser sources of renewable power (and some other minor options) will combine to make a useful contribution to targets, but they will leave wind to be the biggest component of the future mix of technologies, but as an uncertain proportion of the total, probably at least half of the 16GW goal.

4. The future balance between on and off-shore wind power is uncertain: on-shore wind is secure technology and easy to develop, while off-shore has the uncertainties mentioned above, and higher costs and greater engineering challenges. To get to its targets, government will inevitably want to back the safe ‘horse’ strongly, alongside promotion of off-shore wind. A dependency on on-shore wind is recognised, and this will mainly depend on big wind farms, but with contributions from smaller community or farm-based projects – the latter showing much growth of recent.
5. From the UK perspective, the 2020 vision is for a range of 10 to 13GW capacity for on-shore wind across the UK: given an assumption that around 75% of this onshore wind will be in Scotland by 2020\(^1\), this points to around 8.5GW of on-shore capacity in Scotland at the mid-range, which is above but not out of line with the Scottish Plan. But the UK plan also indicates that the wind industry has ambitions that run well ahead of this official projection, with the industry, at its best expectations, looking for development up 19GW of onshore wind over the UK, again with a likely emphasis on development north of the Border, which could rise to over 14GW of capacity if this high ambition were ever to be achieved. This is an understandable approach by the industry, given that the very large off-shore wind developments will be led by a small number of major companies, those with sufficient capital and other resources to address offshore development challenges. This will leave many other developers still looking for opportunities.

6. All that is a bit speculative, and leaves much uncertainty about the future scale of on-shore wind in Scotland, but it will have to augment by several times what is visible at present to meet the main target. There is an important general point here that the 100% target is not a ceiling, and many developers are likely to continue to look north, as they do at present, to terrain where the resource opportunities are better, and where the political ambition and policy encouragement is very strong. Augmented production of wind energy in Scotland should find a ready market in the south for power suppliers needing a source of renewable power to meet their requirements under the renewables regulations.

**The Consents Process**

7. My concern is primarily with the impacts of wind power on Scotland’s landscapes, and this has been controversial matter over the past decade: some other modes of generating renewable power can also be controversial, where they are perceived to have other kinds of environmental impact or ‘bad neighbour’ characteristics, (such as waste incineration for power). For on-shore wind power, there is complaint by developers that the route to consent for wind power schemes is far too slow and cumbersome, and opponents of wind power have complaints that the policy cards are stacked against their legitimate concerns. From my involvement in a number of wind farm cases it could be said that each of these stances has a point. The time taken to development can seem quite protracted, but it would be wrong to blame the planning system itself, or to allow this to be the basis of any restraint on the opportunity for local objectors to have a fair hearing on developments that are often significant locally and controversial. Local objection is only one contributor to delay, and does not arise for all developments: we should strongly welcome local civic engagement and commitment to protect what is important to people locally, and this is an inevitable part of the process of seeking of consent.

8. Large wind farms are substantial civil engineering projects, and delays arise from other factors, such as the scoping process; the preparation by the developer of Environmental Statements, which can often be huge documents\(^2\); sometimes there are complex technical issues to resolve arising from consents that require

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\(^1\) The current Scotland/rest of the UK ratio in capacity is around 60:40 but this will shift further as development proceeds through the decade, perhaps more than the 75% figure used above.

\(^2\) For a recent inquiry at which the author gave evidence, the full ES with summary, and the supplementary documents on cumulative impacts and further environmental data, ran to over 1600 pages.
negotiation over other public-interest issues; and where inquiries arise, there is some further delay, also in the process of releasing consent and related conditions. Not infrequently, there is a gap between consent and construction, which can arise for several reasons, say, the need to wait for consent for access to the grid, where there are capacity problems.

9. In response to the briefing, some summary points on consent are as follows.

- It does seem that a number of Scotland’s local authorities are under heavy pressure from the numbers of wind power cases, some of them being highly contentious proposals. There can be a tension here for Councils that often arises from strong local reaction, as set against the strength of government policy and its directives on how Councils should respond. For most of these cases, it is the effects on landscape or on communities that raise most concern, and policies for these themes tend to be weak at the local level: national policy safeguard for landscape is also not as strong as is desirable, certainly as set against the strength of the national policy drive for renewables development, or compared with protection for nature conservation. The main issues that can hold back development are predicted affects on EC nature conservation sites, or effects on military or civil aviation radar, and many of these aviation constraints are eventually resolved.

- The National Planning Framework provides strong but descriptive strategic direction, and this is supported by locational advice in development plans. SNH, which is the agency with a national responsibility for care of landscapes, offers broad locational advice at the national level, which follows the national policy lead. In practice, such guidance isn’t really working, as the real drivers to the location of wind power development, are accessibility to grid connections; suitable terrain for development, with least planning constraints and with best wind resource; also willing landowners. Developers will say that local authority strategic guidance for the location of large wind farms is too constraining: but these are dominating developments and, for many authorities, the sensible options within their territory for proposals of such scale will often be quite limited.

- The briefing for this inquiry asks whether the adjudication systems are fit for purpose: in one sense, the planning system is fit for purpose in that it has the mechanisms and the professional commitment to address complex development proposals. However, the different players within the planning system may be struggling to deliver assessments on wind power applications: thus, the public agencies that play in important role in planning debate are part of government, and bounden to conform to national policy; and the Councils, as planning authorities, are also subject to strong direction through national planning policy. All these public bodies have a duty under the Climate Change (Scotland) Act to contribute to the attainment of Government’s climate change policies.

- When assessed against some of the outcomes, the decision process does not appear to have reached measured decisions. Some of the cases recently
consented have been highly blatant in their location, say, the Dorenell proposal\(^3\), given consent without any modification by Ministers, on almost the last working day of 2011, after opposition by the local authority and the Cairngorms National Park, and a public inquiry. The proposal was for 59 turbines on the ridge of a high hill in upper Moray, close to the edge of the National Park and within an Area of Great Landscape Value. This application took some time in its determination, but it turned out that the developer has not got an early connection to the grid, and implementation will be delayed.

10. The problem here is not that the planning system is not fit for purpose, but the strong drive of Government policy, the dominating scale of this kind of development, and the volume of proposals in some areas all combine to challenge the conventional precepts of good, professional practice. While the details of proposals are often amended in negotiation between developer and the planning authority or with an agency such as SNH, the scope for mitigation is limited.

**Resolution?**

11 The call for evidence to this inquiry asks about reconciliation between national and local interests, but there is no easy way forward here: part of the problem is that national targets for development have risen progressively to the present level, with no sign of an upper limit; and the is the strength of the policy drive. Schemes that are refused are often approved at inquiry after appeal, or sometimes return in another guise, or after an initial impediment has been overcome. Some recent contentious developments (and a number ahead of us) are located at increasingly high elevations: no doubt such sites are highly productive in their output, but they have extensive visual footprint – indeed there is no hiding developments of this scale at altitude. The language of policy documents promoting wind power is highly promotional and very ambitious, with no sense of compromise. Some will say that providing bigger financial contributions or engaging in more community ownership will ease the tension: it will for some. In any case, douceurs of this kind cannot be part of the decision-making process, and other tensions arise from questions about who benefits and who doesn’t.

12. One can look at maps of development proposals and consents, such as SNH’s footprint map and see that some parts of our uplands are likely to be transformed into very extensive wind parks, say from Eaglesham southwards or in the terrain on the far western end of the Southern Uplands, and there are others. Some might be say that one way forward could be to head for a small number of very large wind clusters that would completely take over and trash the landscape over extensive areas: but this would be very controversial. Wind power development is already widely distributed and development outwith enormous clusters could hardly be restrained, and (importantly) people do live in this kind of countryside. At present, some parts of Scotland are entirely free from wind power, for reasons that are fairly obvious – terrain limitations, grid connection, or other public interest constraints such as designations. But there is strong action to overcome some of these obstacles, and one cannot have any confidence that development will not spread eventually onto such land. So the scope for reconciliation is limited.

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\(^3\) There is an uncomfortable parallel here with the Whinash wind proposal on a high ridge close to the eastern side of the Lake District National Park, refused after public inquiry in 2005, with strong evidence given by the Countryside Agency in support of the Park.
13. The effect of growing numbers of wind developments – large and small – is to transform and devalue many of Scotland’s fine upland landscapes: these effects are not just in remote countryside, as there is a steady flow of new proposals on land in the central belt, some of this being countryside which has only just recovered from the clearance of the blight of an industrial past. As example, there are seven active proposals in relatively close proximity to each other at the south-western end of the Pentland Hills: two are existing wind farms seeking expansion; another is at public inquiry and the others are at various stages in the application process. But the real problem is what lies ahead: the effects of development consents so far are now just beginning to become more evident as these consents are translated into reality: and the rush to the 2020 target will lead to unacceptable change to Scotland’s landscapes. The citizen who cares about Scotland’s outstanding scenery can only watch dismayed, asking what are we doing to our fine countryside?

John W Mackay
29 February 2012
Scotland’s Beauty at Risk
Introduction

There is an unseemly rush to develop wind power in Scotland’s uplands. Not for the first time, the great natural beauty of our hills is being damaged to serve the public policy needs of the moment. The scale of change ahead to our hills is significant, although not yet widely appreciated.

But we are getting close to a tipping point, beyond which there will be much more visibility of wind power schemes that are approved but not yet constructed, and there is a big flow of proposals being planned or at application stage. If present unbridled policy for on-shore wind power development continues, the outcome will be to transform Scotland’s great natural beauty.

The procedures for protecting the beauty of our countryside are not working well enough; the targets for delivery continue to increase with no known upper limit; the longer term implications are not being addressed; and, as in previous bids through public policy to exploit our hills, care for their beauty is at the bottom of the pile of considerations.

Exploitation of our hills for wind power is a soft option, and we need to change direction now to other less damaging forms of generating renewable power – read on.

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SCOTLAND’S BEAUTY MATTERS

Scotland’s scenic beauty is of great value to the nation, but it is at risk from wind power development. Already there has been much complaint about these major constructions on our hills, but there is strong policy support for more of them. We need a new policy approach to renewable power generation, so that Scotland’s beauty is not further damaged.

THE BEAUTY of Scotland matters to people – a belief that lies at the heart of our national identity. Long celebrated by poets, musicians and artists, it is part of the image others hold of our country, creating repute beyond our shores. Survey after survey confirms that scenery is a prime attraction for our visitors, and thereby the basic resource upon which rural tourism depends. Above all, Scotland’s beauty matters because it makes living and working in Scotland special – it inspires, refreshes and is part of our quality of life.

But do we care enough, debate enough, or do enough to ensure that the beauty of our land is secure? The short answer is that many people do care, often with passion. Yet, we do not debate or do enough, and part of the problem is that the matter of caring for Scotland’s beauty does not sufficiently engage the body politic. From time to time, politicians rest their arguments on this part of Scotland’s heritage, but then move on quickly.

There is an unspoken assumption that Scotland’s beauty is as enduring as the hills which many people value most in our scenery, and this can lead people to take the quality of our landscapes for granted. But this is wrong: Scotland’s appearance changes as society places new demands on the land. The pace of change to town and country has speeded-up over the post-war period; and the scale and diversity of this change has grown, from both development needs and land-use change. Thus, in the 1950s and ’60s, afforestation and hydro-electric development transformed many landscapes in the uplands; and on low ground, arable land has been changed by modernised agricultural practice. Social change has led to many needs, such as more housing, roads, communications and services; and much change has come through the restructuring of the Scottish economy. While many such changes are modest in scale, their cumulative effects on local amenity can be significant. Some of these trends have had profound effects on the beauty of the countryside.

But there is no proper catalogue of the extent of such change to our landscapes, and few people know all of Scotland well enough to understand and describe with authority what is going on at the national level. For most of us, our awareness of local change is usually limited by our first knowledge of a place, unknowing of what change has already happened, and what has already been lost.

Finally, no one owns Scotland’s beauty, but all of us have a stake in its wellbeing; yet it is difficult for the many who care about the beauty of our land to have a say, or to know what to do in order to help care for it. Too often, damage to our scenery is assumed to be someone else’s problem to solve: time to change that perception.
WIND POWER AND SCOTLAND’S BEAUTY

Modern turbines rise to 350-400 feet (110m plus) base to blade tip, and they are constructed on exposed sites. Turbines are now of a size that makes them highly visible in the longer view. They transform places that are mostly semi-natural in character, often with qualities of wildness, and their construction calls for a substantial network of access roads. These are power stations, not farms.

TO CAPTURE wind to best effect, most large terrestrial wind farms are located in the uplands or on marginal hill land – rough grazings of this kind comprise more than 60% of Scotland’s land cover. The agricultural potential of much of this terrain is limited, but lightly used does not mean unvalued: the scenic quality and the wild character of Scotland’s uplands and undeveloped coast is a remarkable asset for a nation that is so urbanised elsewhere, and it is of value beyond the UK.

Yet the intangible qualities that people value in these semi- or near-natural landscapes are barely given a place in debate and judgements about wind power development – the sense of freedom, solitude and challenge to be found there; enjoyment of tranquillity, wildness and naturalness; appreciation of the history and character of the land; and most of all, its beauty. This is how people engage with and enjoy Scotland’s landscapes – an aesthetic, emotive and physical experience that touches all the senses, which contributes to the well-being of people working and living in a modern society, and which underpins the values people find in their enjoyment of Scotland’s outdoors through all kinds of open-air activities.

Some people like wind turbines and find them arresting or majestic objects: indeed, a well-proportioned turbine has sculptural qualities. Some may just accept them for their green credentials – many others may not care one way or another. Wind turbines can help remote communities that are off the grid, and a number of wind farms or single turbines would not be unduly troublesome – just another set of unwanted marks on our landscape.

The problem ahead is the unbridled scale of future growth in wind power development. So dominating are modern wind turbines that they irredeemably change the physical appearance and character of those areas favoured for their construction, and damage its beauty. The movement of the blades is discordant with their rural setting; and they are objects of high contrast. So extensive is their visual footprint that they are conspicuous in the view over distances far beyond the effects of ordinary development. So industrial in character are wind farms that extensive semi-natural vistas, once untrammelled by constructions, are transformed; and more large turbines are now appearing on low ground, where they are out of scale with their rural setting. These are

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structures that are beyond concealment. Nor can they be designed away: they flaunt their presence and dominance, and diminish the timeless and inspiring qualities that many people value in our hills, especially in wilder settings.

In the short period since the onset of large-scale wind development, the size of turbines has increased greatly. Early turbines were up to 150-200ft (55m) high, but turbines in the range 350-400ft (100-125m plus) are now the norm, and bigger turbines are coming. Best efficiency in operation requires that larger turbines be spaced further apart, so that a medium-sized wind farm can extend over the area of a small town, with internal road networks many miles in length. The approved Griffin scheme, with 68 turbines, near Amulree, covers an area similar to nearby Perth, and the 140 turbine Whitelee scheme, south of Glasgow, initially covered over 20 sq miles, with a road network of 44 miles – and it has three approved extensions, which will soon take it to 215 turbines. These are major civil engineering projects – suggestions that they can be removed later and the land returned to its former state are unrealistic.

As more wind farms are constructed, the cumulative effects grow. Some parts of upland Scotland will soon be transformed by wind power development, for example, extensive areas of the Southern Uplands, Caithness, Easter Ross or NE Scotland. And as more of this change arises, another outcome is that, as people move around the country, the overall image they may hold of Scotland’s scenery is being damaged by repeated sight of turbines – and this is about to get worse, given the likely scale of change ahead.

Wind farms will affect not all of Scotland. Some terrain is not as suitable as developers want; some areas are too remote from grid connection – for the present. Our most scenic landscapes have a degree of protection as National Parks or National Scenic Areas, often overlain by nature conservation designations: however, these special areas are not immune, and some have already been subject to bids for renewables development, such as the Beauly-Denny grid upgrade, which will cross part of the Cairngorms National Park. This Park is also subject to wind development proposals very close to or right up to its boundary, which challenge the purpose of its designation. Reinforcement or extensions to the electricity grid, as proposed in the National Planning Framework (also future under-sea cabling) will ease some current limitations on wind power development in the remoter parts of Scotland.

The reality ahead is of concentrations of wind power development that will transform many fine upland landscapes that do not have any protected status. Moors in southern Scotland is presently at greatest risk, being not so strongly protected by designation, and having better grid-connections. The moors close to urban populations are also targets for wind farm construction, and while many of these landscapes have no protected status, this does not mean that they have no value: they are often very attractive places, and this is where most of Scotland’s population lives. For many people, these are the hills of home – the setting for their daily life and work, and for their recreation.

Concern for the care of the beauty of our land is about values: the values that people hold for their own local landscape, and the values held generally for Scotland’s beauty. In this light, assertions that the public will just have to get used to wind farms are misplaced. Values of this kind are deep-rooted, and not open to being cast aside by administrative diktat.
WHAT’S GOING WRONG

Strong policy and subsidy support is driving the rush to wind power. The policy is target-led, and these targets keep moving onwards, now aiming for all of Scotland’s electricity generation needs to come from renewable sources by 2020. The commitment to renewables is such that there is no known ceiling to future wind-power development.

Single-minded policy
National planning policy requires that local authorities support development for green energy, to ensure that the potential of their area for renewables is realised and, in their development plan, they must prepare a spatial framework for wind farms of capacity greater than 20MW. The National Planning Framework has positive words on safeguard of the environment, but the policy drive for green energy development in this document is very strong. The targets are now so ambitious that the amenity of the Scottish countryside is bound to be seriously affected.

This national policy is effectively a direction to all bodies with a role in the planning system to ensure a smooth path to meet the energy targets, which can only be delivered in the short-term by on-shore wind development. Public bodies now have a duty, in the Climate Change (Scotland) Act 2008, requiring them to contribute to the achievement of national policies to mitigate climate change.

Scottish Natural Heritage (SNH) is advisor to Government on the care of Scotland’s natural heritage, including its beauty, and has its own strategic advice for wind farm location. This follows the national approach, but is more specific in indicating areas where wind farms might be more (or less) acceptable, and this is backed by much supporting advice.

Imperfect procedures
Under their planning powers, local authorities assess and give consent (or otherwise) for wind or hydro schemes up to 50MW in capacity. Above these limits, consent for electricity power generation lies with Scottish Ministers under the Electricity Act 1989, and recommendations for consent to such schemes mainly lie with the same part of the governmental machine that promotes growth in wind power. The approach for Electricity Act development broadly follows planning procedures, including preparation of an Environmental Statement (ES), which is required by European Directive for all major developments likely to have effects on the environment.

Environmental Statements focus on the conservation issues – mainly nature conservation and landscape, and sometimes cultural heritage and pollution issues. These documents usually have some social content, but such issues get much less attention, likewise in the influence they have in decisions. Thus, the effects on tourism, the community interest in the well-being, the beauty or sense of place of their local area, or enjoyment of the outdoors by the public, all have very weak policy anchors against the policy drive for renewables.

Local authorities can have insufficiently robust local policies for the protection of their...
landscapes: natural beauty comes after other local priorities. And national policies and statutory means for the protection of scenic beauty are not nearly as robust as those for nature conservation. Environmental Statements (ES) are weighty documents: they are prepared by the developers and their consultants, and therefore have an unavoidable starting point that the proposals are possible, appropriate and in accord with policy.

Only issues with strong EU Directive backing, such as effects on European nature conservation interests, can have significant restraint on large renewables schemes, though some may be modified during scrutiny. Problems with the potential interference from turbines to commercial or military air-traffic radar can also have weight.

**Constrained public body scrutiny**
The local authorities have a key role in the ES procedures, which can lead to a public inquiry if they object. Some public agencies, such as SNH, Historic Scotland and SEPA, are statutory consultees. These bodies will often provide information for the ES, or advise on methods for data collection and analysis, especially SNH, which has prepared much advice on how best to assess the impacts of wind proposals. The opinions of these agencies are given weight in the assessment the findings of the ES, and this is not improper: they are the official expert advisors.

Without challenging the integrity or skill with which the staffs of these agencies perform their statutory role, there is no avoiding that all public bodies are part of Government, and required to follow its policies, likewise for land-managing public agencies in providing space for wind farms. Public body scrutineers act effectively in assessing the details of proposals, such as the location of individual turbines or their numbers, and other impacts: sometimes to good effect: however, these bodies have to conform to the general scale of development sought by Government.

SNH has objected in principle to a number of wind proposals, usually for EC nature conservation reasons, and sometimes for amenity, especially where cumulative impacts arise – however, by the time cumulative effects become an issue, the landscape will have already taken a big hit.

**Scenic beauty underplayed**
In preparing an ES, developers engage landscape architects to assess the visual effects of a proposed wind farm, which is done using a Landscape and Visual Impact Assessment methodology. This kind of evidence carries weight because it purports to offer objectivity in the assessment of landscape-change issues that involve aesthetics and values. The public sector bodies endorse this method, and SNH’s opinion of the landscape assessments in the ES can be important, likewise for wildlife conservation, given its statutory remit to care for all of Scotland’s natural heritage, including its beauty.

While these assessments contribute to the process of technical debate leading towards decisions, they mainly address the outward manifestation of the proposed structures, and do not get to the core of what concerns those who object on amenity – the intangible qualities described earlier. People are labelled as ‘visual receptors’ with an emphasis on the visual effects, rather than on how they engage with, enjoy and value the beauty of the land.

Yet the emotive engagement people can have with their locality is what moves many to hold passionate views against this kind of development: hence the often significant levels of local opposition to wind farm or grid development – more than 17,000 objectors to the Beauly-Denny grid upgrade. It is time to give more weight to the values that underpin how the public engage with and enjoy Scotland’s landscapes.


**Rural dissent**
Strong opposition to wind power proposals often arises in the affected rural areas. The overriding concern amongst those who oppose wind power development is the imposition of dominating new structures that damage the amenity and the values held for the area within which they live or work or, for some objectors, that they enjoy through being regular visitors.

Certainly, the owners of land on which development takes place do benefit, and some transient local expenditure and employment will arise over the short period of construction. Developers are increasingly offering *douceurs* to communities, but these payments can be seen as a means of buying-off opposition. The reality is that wind farms extract value from an area by virtue of damaging its beauty, and the main financial benefits go to distant investors.

**Weak wider-public understanding**
The case argued for development often refers to public opinion surveys that show a public preference for wind-power, commissioned as part of propaganda wars against objectors. Some of these surveys have limitations in their methodology; and others address complex matters of energy policy that are unsuited to public opinion survey.

The public is exposed to heavy publicity about climate change, this pressing the urgency of action. So it is not surprising that many respondents to opinion surveys opt for the seemingly virtuous response of generation by wind power. But most respondents to well-structured national opinion surveys will live in urban areas far distant from such developments, and will have little understanding of their scale and local effects, especially the oncoming cumulative effects on scenic beauty. Deference to populist opinion is not how society generally resolves other complex value-based issues: why should wind power be different?

**Subsidy and regulation-led**
Delivery of Government policy is led by the Renewables Obligations Orders, which provide a complex carrots and sticks approach: the sticks are penalties on electricity supply companies who fail to deliver a required (and annually increasing) proportion of renewable power to their customers. The carrots are subsidies to generators, arising from this being a more expensive form of power generation; and supply companies that meet their targets can receive a payout from the penalties. So the power supply industry is under strong statutory pressures to deliver the requirements of these regulations. The additional costs arising from this mechanism are met by a loading on consumer charges, hidden in everyone’s electricity bill.

**And the outcome is...**
In practice, wind is the only option to meet ambitious targets at an early date, given serious failure over past decades to take the long view in securing a balanced energy policy for the future. The local authorities have to respond to strong national policy guidance, and they cannot take the national overview. Generators of wind power, not unreasonably from their stance, seek sites with best wind potential and topography, with accessible grid connections to move power towards its end uses.

Unguided development, backed by very strong national policy and the statutory requirements on the power industry, all lead the developers to seek consent on hilltops and ridges, in order to capture most wind, some of them sites of great blatancy, and where development for any other purpose on the same scale and impact would normally be regarded as unacceptable. The public interest role of planning has somehow been turned on its head, with developers able to bid confidently for consent on sites that are optimal for their needs, sometimes challenging local policy advice or conservation designations.

Some proposals do fall by the wayside on early consideration, say, for nature conservation reasons, or limitations on grid connection; for others, the size of the scheme and its details may be amended in early negotiation or through the consent process. For some schemes, their location is less blatant than others, but all schemes using large turbines are dominating developments that irredeemably change the character of their settings.

*Are the public aware of and signed-up to the scale of change ahead to Scotland’s beauty?*
WHAT LIES AHEAD

Wind power schemes already constructed or approved are but a fraction of what is being considered for consent or future development. The electricity industry will have ambitions not yet in the public domain, and policy on renewable energy is to press onwards to higher targets, with no known limit to present ambitions.

What’s happening now

The scale of change ahead to Scotland’s scenery from wind development is not yet evident: the consent process takes time, likewise construction. Useful data on renewables development are gathered by SNH, although the dynamic of development makes it difficult to be precise on numbers. SNH records around 400 wind-power projects of more than 3MW, either approved or in the consent process, including those at what is called the scoping stage: that is, projects which are firm in intention and at the point at which an Environmental Statement is required.

Of these schemes, over 130 are operational or approved and not yet constructed, and another 270 are in the consent process. In addition, there are many small schemes less than 3MW in capacity – some quite modest, others on exposed sites, such as the big single turbine at Glenmavis near Airdrie. At any one time, SNH is in contact with a large number of other proposals, usually around 250, known to it at pre-application stage on a commercial-in-confidence basis. Some of these early proposals will fall by the wayside, but there is a flow of others to take their place.

The data show that around 50 schemes larger than 3MW in capacity have been refused over recent years, either by local authorities or by Inquiry Reporters. Few of the large proposals have failed to get consent, two exceptions being the large scheme on Lewis, set back on account of European nature conservation requirements, and the large Kyle proposal in East Ayrshire, from possible effects on Prestwick airport radar. Others have been modified or delayed during the scrutiny, and many other refused schemes are small in size, including some close to rural settlements, set aside on local amenity grounds.

Refusals by a Planning Authority have often led directly to an appeal, sometimes with the initial outcome being reversed. And once in place, it is difficult to deny expansion of a wind farm, given the existing impact and the infrastructure already in place. A good number of developments already have or are seeking consent to expand: for example, the large Clyde scheme (152 turbines) has a current application for a further 57, located on ridge tops over a large area. Proposals that are refused can also return to seek consent, either reduced in scale or after resolution of technical problems, such as effects on radar. And there are large wind power proposals in the islands that await resolution of grid connection needs.

The map for central and southern Scotland (page 9) illustrates the significant change ahead to the countryside of south Scotland from schemes either approved or in the application process. This part of Scotland is attractive for wind development because the terrain is suitable, with good opportunities for grid connection. But the beauty of this fine, often lonely, countryside has already taken a big hit from afforestation.

Looking ahead

Some industrial consumers are now investing in wind power on their own land, both to reduce energy costs and to meet their targets on carbon emissions. We are likely to see more of this, often in near-urban settings where amenity for local residents is already not of the best.

There are large offshore wind proposals in prospect, but they will only have effect towards the end of this decade. Development offshore has high costs and engineering challenges, especially in Scotland’s deeper and stormier...
coastal waters, and special connections to the grid have yet to be arranged. Large-scale development offshore will mainly attract the big generators on account of the scale of funding needed, leaving other developers still looking for terrestrial sites: so wind-power development on land will continue. If offshore is near-shore, the same amenity issues arise, and there is the prospect of the increasingly large turbines used offshore being used on future terrestrial sites.

The Scottish renewables target for electricity generation has increased in steps from 40%, and it now stands at 100% of our needs by 2020, alongside a target to have 30% of overall energy demand generated by renewables. Currently, wind power is just over one tenth of all electricity generation in Scotland, with hydro around the same level. To reach the 100% target by 2020, most of the shift away from conventional sources will have to be into wind (the potential of hydro being limited) and much of this is likely to be terrestrial wind, depending on progress off-shore.

Prediction is uncertain, but allowing for export of power south, future generation by wind will have to expand several times its present level to meet the target, hence a current drive to accelerate the rate of new development. At present, a quarter of home-generated power goes south, and there will be an inevitable growth in demand there for more green power, from suppliers needing access to renewable generation to meet their statutory obligations.

**How much does Scotland have to deliver?**

Scottish targets are higher than south of the Border – the current target for the whole of the UK is for 15% of all energy demand from renewables by 2020. This is understandable because Scotland has existing hydro-power, and resources for other renewables that are better than elsewhere in the UK. But how much extra development is Scotland to accept on behalf of the rest of the UK, where much of the uplands (mid-Wales apart) has strong policy protection through designation as National Park or Area of Outstanding Natural Beauty?

The role of specific targets for electricity generation is becoming more difficult to assess, with the emergence of carbon reduction targets, set in recent domestic climate-change legislation and via the EU. The UK Climate Change Act aims for 80% reduction in carbon-emissions by 2050 against a 1990 baseline – a Scottish target of 80% reduction over the same period has been enacted in Scottish equivalent legislation, but with a proposed 42% reduction by 2020 and the intention of tough annual 3% reductions. These demanding targets imply significant changes to lifestyles and work patterns, as well as technological innovation, all of which will take time in persuasion and implementation.

Meanwhile, electricity supply is the biggest component of the carbon budget and stands in the front line of delivery which, in turn, implies more wind power. These are not abstract issues: there are bold ambitions for Scotland as the wind capital of Europe, or the so-called Saudi Arabia of renewables. Strong policies encourage this, and the subsidy and the market-led policy all entice developers to arrive in Scotland from elsewhere.

**What about tourism?**

One of Scotland’s main tourism assets is the quality and character of our scenery. There is ample market research to show that our visitors greatly value our undeveloped open countryside, especially its sense of space, wildness and naturalness: those who come to enjoy Scotland’s
Scotland’s Beauty at Risk

**Wind projects - Central and Southern Scotland**

Note on the data

The information on the map above comes from SNH’s current *NaturalSpaces* data set. SNH cautions that its data on wind development are incomplete and should only be used for illustrative purposes. This arises because the pace of wind power development is high, and the status of schemes change as they move through the application process. The data are less complete for schemes at the scoping stage, because SNH may not have final maps for digitising at the (welcome) degree of precision of its mapped record. So, some large current proposals are not shown above, notably the Clyde Extension and Earlshaugh to the north of Moffat; and Glen App near Cairnryan, plus some smaller schemes.

The area owned or leased by the operator is shown, and this gives a good impression of the physical scale of development in south Scotland, either existing or proposed. In some cases, the development occupies the whole area of the mapped site; in others, the whole area is not yet fully used. This part of Scotland attracts development, and there is action underway to overcome current obstacles to more projects, say, from radar and other restraints.

A *Wind Footprint Map* for all Scotland can be found on SNH’s website at [www.snh.gov.uk](http://www.snh.gov.uk). It is updated once or twice a year. SNH also releases a useful annual review of trends in renewables development.
outdoors for its scenic qualities and its wildlife, for outdoor activities and the field sports are all amongst our most loyal and regular visitors. Tourism strategy seeks growth in the market, through a series of campaigns and events, but aiming for quality and delivering ‘authentic and distinctive experiences’. The year 2013 is billed as the year to promote Natural Scotland: ‘a time to enjoy Scotland’s outstanding natural beauty and cultural heritage’.

Research has been commissioned on the possible effects of wind farms on tourism, but the premises underlying these studies are weak. It is argued that surveys identify a majority of visitors who aren’t bothered by wind farms and, in responses to speculative questions about future holiday intentions, many say that they will not be deterred from returning. How do we know? Judgements of this kind are fuzzy snapshots of current opinion made on limited understanding by respondents, and on the amount of wind development visible today. Future holiday intentions rarely rest on one issue, and the outcome is difficult to predict: dissatisfied visitors tend to slip away quietly, carrying damaging word-of-mouth messages, and there is no means of measuring this effect. It is often asserted that tourism revenues will be only marginally affected. The implication is that the beauty of an area can be damaged up to the point where financial loss can be measured and verified. This is a cynical proposition, in that damage to Scotland’s scenery would be very serious by the time such effects could be disentangled (assuming that they ever could be) from the complexity of the wider tourism economy.

It is wrong to impute that we can continue to damage the quality of the tourism resource to the point at which visitor discontent can be conclusively proven by research. It is also quite wrong to imply that only economic matters count: the quality of visitors’ experience is critical. The starting point to sustainability in tourism must be protection of what is of prime value in the tourism resource.

But who is looking ahead on behalf of tourism? An assumption that visitors will just keep on coming would be wrong, given the highly competitive nature of the international tourism market. Tourism is a tough industry of mainly small businesses, many competing with each other, all focussed on their business, and aiming especially (and understandably) for survival. Only a few forward-looking operators take the long view, and wonder what their business will be like a decade ahead. Time to take that long view in safeguarding what is most distinctive about Scottish tourism and most valued by our visitors — its beauty and its wild, open spaces.

**Been here before**
Scotland is not short of eyesores or poor quality development. Much of this poor amenity lies in lowland Scotland, in and around settlements. However, the scenic quality of our hills has also
been damaged by ventures to serve either (or both) the local economy or the national interest. In the post-war period, public-policy initiatives of the moment led to action to promote hydropower development, to enhance the productivity of upland agriculture, to promote afforestation, and more recently, there was a push for fish farming, mainly affecting the undeveloped western coastline.

All these ventures began with pioneering enthusiasm for their benefits and, while there has been some progress, the achievements have never matched expectations. Problems of implementation have always arisen, whether from over-ambition, failure in the planning or delivery, or from external factors, sometimes the harsh reality of economics.

And have we forgotten that the beauty of Scotland has already taken a big hit from past renewables development for hydro-power? This arose from damage to fine landscapes by reservoir construction; and there were adverse effects on the ecology of water courses and on pre-existing lochs that were overtaken by new steep-sided reservoirs, often seen with ugly draw-down scars? The scenic glens of mid-Inverness-shire – Strathfarrar, Glen Cannich and Glen Affric – were identified at the end of the war as one of five prime landscapes deemed to be of national park quality, but all were developed for hydro-power, which led to judgements that the beauty of this area had been diminished, such that it has not figured in later debate about national park status.

The adverse effects on the character of Scotland’s uplands from all these ventures have been significant, and remain uncatalogued. We are with wind just at the outset of that first stage, driven by over ambition as to the benefits. Natural beauty has always been at the bottom of the pile of considerations as these successive waves of ambition hit the uplands – time to reverse this.

**Who cares for beauty?**

As consents emerge site by site, there is no consideration of the overall effects on Scotland’s beauty although, as part of the approval process there may be local assessments of cumulative visual impact between adjacent schemes.

One of the tests to be met for developments promoted under the Electricity Act is that the developer is required in statute to ‘…have regard to the desirability of preserving natural beauty…and ‘do what he reasonably can to mitigate any effect on the natural beauty of the countryside…’. This is a very low hurdle to cross, interpreted as taking some care in the detailed design of proposals that, by their scale and dominance, are bound to have major effects on the natural beauty of the countryside.

And the natural beauty test can only apply to individual cases, not the cumulative effect of many more schemes. Government departments and public bodies also have a statutory duty in their work relating to land to ‘…have regard for the desirability of conserving the natural heritage’, including its natural beauty and amenity. The feeble wording of this duty, which dates back to 1967, leads to it being ignored.

Is anyone thinking about the longer-term overall effects on the appearance of Scotland? It seems not – time to challenge this complacency.
TIME TO CHANGE DIRECTION

We do need to act on energy. For a range of reasons, we need to shift the balance of our energy sources; there is an important national need for security of supply in a turbulent world, at a time of fast-growing global demand for energy; and there are longer-term issues over the depletion of the most accessible fossil fuels. There is also a need to address public attitudes towards the consumption of energy.

THIS document does not consider the other limitations of wind power generation – such as its intermittency and unpredictability in output. Nor can the arguments here address the complex matter of how we source and manage the nation’s energy needs, including past failure to act earlier in securing a balanced energy supply or in promoting other modes of renewable generation. And there is the difficult matter of influencing people to act responsibly in order to minimise their use of energy, only now beginning to be addressed.

The focus here is on protecting Scotland’s great natural beauty, for the reasons set out in the first page – an issue that has been pushed aside in the rush for wind.

There is a sense in current debate that climate change is somehow a divergence from stability. Not so: the historical and geological records demonstrate that climate change is the norm, from causes that are uncertain. Yet, there now is real and concerning evidence of human influence on the natural environment: so we do need to act on energy, and a serious and committed approach is needed. Wealthy, energy-consuming societies also have an obligation to take a lead. However, action should be proportionate and rational, bearing in mind the reality of vast growth in energy demand elsewhere in the globe. We need to be more hard-nosed about how we address the matter, rather than rush for the easy option.

And, we need to act to protect Scotland’s cherished beauty. The argument above has several main themes:

- a short-term approach based on terrestrial wind-power, market-led and subsidised, will seriously damage Scotland’s beauty;
- the procedures for assessment of schemes are dominated by a very strong policy drive that depends on wind power in the coming years;
- evident concern about the strong values held by people for Scotland’s landscapes is being set aside;
- we are repeating the failure of past upland land-use initiatives to pay proper attention to the care of natural beauty; and
- the development ambition has no limits, and to continue in the present direction will have serious effects on the beauty of Scotland’s uplands.

The progressive ramping-up of targets on electricity supply and carbon saving only reinforces terrestrial wind power as the dominant way forward in the years ahead, given that alternative options are not yet available on a scale to make a sufficient difference.

An end to the rush for on-shore wind development is needed now – it is time to rethink approaches to renewables development in a way that does not trample crudely over the beauty of our land; also to give more emphasis to the difficult issues of energy use.

Scotland has a bold strategy for a shift to green energy, with much in it that is highly commendable, both in the scale and the breadth of the intention. But past governments have been too slow in addressing energy use and needs: why, then, should the beauty of our hills be in the front line of sacrifice to retrieve these past failures, and why should the rush to green energy lead to unwanted effects on the quality of our fine countryside?

Scotland’s beauty is important to people and a formative part of the identity and image of the nation; it is now at risk and we need to safeguard what people most value in Scotland’s outstanding landscapes. The drive to on-shore wind is the easy option, giving reassurance that something is being done – but with complacency as to the outcomes.

So wind remains the soft option, and our hills are the soft target: time to change direction.
‘The outstanding beauty of the Highland scene, which is one of the nation’s great natural assets, has been haphazardly expended and no account kept.’
W H (Bill) Murray  *Highland Landscape 1962*

‘There is no other country in which the roots of memory are so entwined with the beauty of nature.’
John Ruskin  *Praeterita 1886*