A Policy and Socio Economic Impact Review

prompted by the current generation of windfarm planning applications in Strathnairn

For Strathnairn Community Council

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Policy and Socio Economic Impacts

The Evolution of Policy

Public policy is developed in the light of best evidence at the time and revisions in public policy are usually made in the light of new evidence or changes in public preference. There is of course a lag in public policy, as it takes time for the electorate's changing preferences to be reflected politically, and the hubris invested by the proponents of any particular course of action ensures that it takes time for these actors to either move on, or accomplish their U-Turn (in the light of changing circumstances).

In its enthusiasm to deal with the threat of climate change the UK decided to set an example to the rest of the world and legally commit itself to actions in excess of its peer group nations. Indeed the UK submitted itself to the 2008 climate change act whereby it was legally binding on government to meet various targets[1].

Scotland in its eagerness to find some key USPs, and to replace it fossil fuel sector, widely seen to be in decline, developed a policy on renewables that possibly exceeded the ambitions of the UK national government. Scotland intended to be more green than the English, who as mentioned were already determined to set an example to the rest of the world.

Zeal compounded. This way lies dragons.

Some countervailing arguments have meanwhile developed and it is unsure how they are going to work out. However the blowback from the population with regard to onshore wind generation is well underway[2]. An earlier chancellor of the exchequer (Lord Lawson), sensing some irrationality in policy development, founded the Global Warming Policy Foundation to review and explore appropriate and optimal policy responses to man made climate impacts. Many current policy makers had found this sort of critical review unwelcome and he has been subjected to some derision.

The fall in the price of oil has also recently had several consequences – one of which is to make the deals that have been done for renewable subsidies to be even more out of kilter with true market forces than heretofore. This reminds us of the PFI deal that was made to build the new Airport terminal at Inverness Airport. The developers would receive a per capita payment for each passenger who passed through the terminal. This price was set before the low cost revolution began and everyone was paying an expensive British Airways ticket. Within a few short years low cost flying had transformed the airport and the deal looked very, very poor. They not anticipated the possibility that the base price might go down as well as up. This PFI then had to be bought out (at

[1] It should be noted that this Act is an attempt to tie the hands of future governments (no backsliding in the eyes of the zealots) and therefore make them less accountable to future public accountability, and hence is very anti-democratic

[2] Our key finding is that insofar as our survey experiment mimics the difference between the general public and people who live near a wind farm or proposed wind farm, our data explain part of the NIMBY effect. Questions asked in national surveys about proposals such as wind farms exaggerate the support for wind farms because the answers are typically superficial, top-of-the-head responses. When people think about the advantages and disadvantages of wind farms, as they would if a wind farm were proposed for their community, their support diminishes. *Explaining NIMBY Opposition to Wind Power Smith & Klick University of California 2007*

great extra expense) to clear this hindrance to growth and the public sector were once again seen to be poor at devising contracts. (Europe Winds back the clock on windmills).

According to the Department for Energy and Climate Change (DECC) energy figures for 2013 onshore wind was already supplying 65% of renewable energy in Scotland and with a DECC estimate in 2013 highlighting that 92% of renewable 'investment' was being directed at onshore wind. We can easily appreciate that wind has been identified as the central means of delivering the Scottish Government target of 100% renewable energy sources by 2020. It seems there will be many, many more windfarm applications in the pipeline, before policy change will be possible.

The Precautionary principle

It is often prudent to adopt the Precautionary principle in matters of public policy as early adopters are often also early repenters.

Place oneself in the mind of the promoters of 1960s tower block developments. They were fired with the zeal of clearing away inner city slums and yet in so doing they set in chain a series of unintended consequences that are widely seen as an unloved policy blunder.

Similarly the zeal for a Middle Eastern interventionist policy that swept the west in the 1990s and noughties with the wish for a new order taking over from the corrupt regimes that were then extant. The various disappointing outcomes have now chastened the ambitions of western foreign policy in these matters, and have greatly eroded the appetite for similarly motivated intervention.

One will remember from school history that France in the 18th century best refined the concept of the Absolute Monarch, best exemplified by the actions of Louis XIV. However the phrase that was used of this time was "Never had a king so much power, and yet was so little obeyed". The French regions found ways of dealing with the overweening pretensions of the centre.

The parallels we wish to draw with current windfarm policy we trust are obvious.

Don't be too eager; don't be too zealous; be aware of the law of unintended consequences and policy change, and electoral mood change is always just around the corner. There is an unseemly rush to develop wind power in Scotland's uplands. Not for the first time, the beauty of our countryside is being damaged to serve the public policy needs of the moment. We want to ensure that Strathnairn does not become a memorial to the apogee of a policy that is then subsequently subject to revision and later regret.

Caution and, we would suggest, pre-caution is required.

Follow the Money

Follow the money is the phrase popularised in the motion picture *All The President's Men*, which suggests a money trail will highlight and underline the actions and motivations of key actors. When one reads the optimistic and environmentally correct narrative of the windfarm companies spurred on by their noble motives, one could be forgiven for thinking that these are non-profit, earth saving philanthropists. Bear the inconvenience for the sake of the planet is the subtext of their proposition. The money trial unfortunately suggests something alternative.

Landowners can expect to be paid 5-6% of the annual turnover of windfarms, or around £40,000 a year for each large 3MW turbine[3]. "They see windfarms as a new farm subsidy but they do not have to take any risk," said one agent. "Only 60% of development applications may go through, but the returns if they do get built are enormous." In return, landowners are offering communities around £1,000 per MW installed, according to RenewableUK, the wind industry trade body, in compensation for what some consider visual pollution and other disturbances. In the case of Airvolution they have confirmed that if the seven turbines were built in Carr Ban, they would contribute £5,000 per MW installed into a community fund.

So far, 4.5GW of onshore wind power has been installed in Britain, with a further 8.5GW in the planning system or expected to be built in the next seven years.

Estate owners in Scotland – where 1,200 people own two-thirds of the land – have so far benefited the most. The Earl of Moray is thought to get about £2m a year in rent from a 49-turbine windfarm on his Doune estate in Perthshire, while the Duke of Roxburghe stands to make more than £1.5m a year from his 48-turbine Fallago Rig development in Lammermuir Hills.

This situation reminds one of the Tragedy of the Commons, an economics theory by Garrett Hardin, which observes that individuals acting independently and rationally according to each one's self-interest, behave contrary to the whole group's long-term best interests by depleting some common resource. The term is taken from the title of an article Hardin wrote in 1968, which in turn is based upon an essay by a Victorian economist on the effects of unregulated grazing on common land.

Who for instance owns one of Scotland's key assets – its beauty? Who is specifically charged with its protection and who, if anyone, pays when it is degraded. Just as fossil fuel consumers are now being brought to account for their abuse of the commons through greenhouse gas emissions, so the renewable industry must be held to account, like every other industry, and pay for the true cost of its impact. Of course the true cost is not readily apparent. Our public accounting has not caught up with this particular policy genie; indeed it may be a case of you don't know what its worth until its gone.

> *"Roads are made, streets are made, services are improved, electric light turns night into day, water is brought from reservoirs a hundred miles off in the mountains – and all the while the landlord sits still. Every one of those improvements is effected by the labor and cost of other people and the taxpayers. To not one of those improvements does the land monopolist, as a land monopolist, contribute, and yet by every one of them the value of his land is enhanced. He renders no service to the community, he contributes nothing to the general welfare, he contributes nothing to the process from which his own enrichment is derived. ... the unearned increment on the land is reaped by the land monopolist in exact proportion, not to the service, but to the disservice done."* WS Churchill 1909

Part of the motivation behind the notion of 'sustainable development' must be a wish to prioritise long term benefit for the whole of society over short term benefit to some in society. Unless the environmental and social strands of sustainability in 'sustainable development' are better fleshed out and protected in relation to windfarms, how will the other stakeholders be able to hold their own against the economic imperative of the few?

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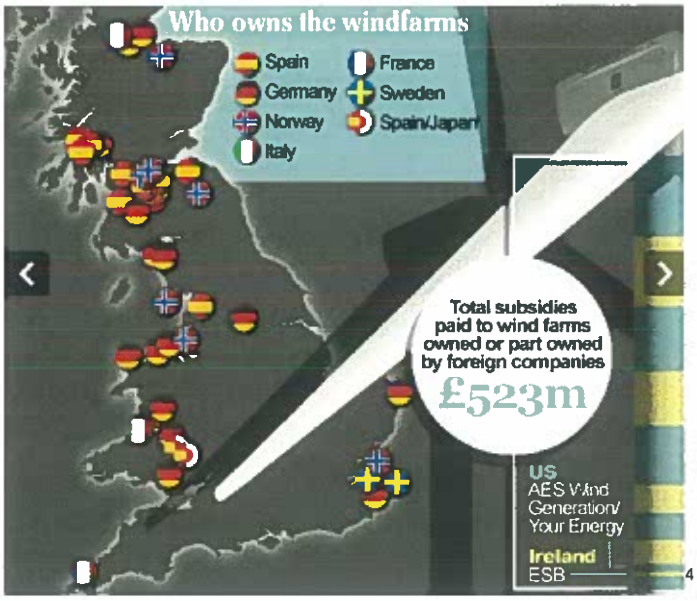
[3] http://www.theguardian.com/environment/2012/feb/28/windfarms-risk-free-millions-for-landowners



Where is all this money coming from one might ask?

"Every household now pays £68 a year to subsidise renewable energy projects such as wind farms, solar panels and biomass plants and to fund carbon taxes, according to official analysis published on Thursday. The policies, which are intended to help tackle global warming, account for about 5 per cent on an annual energy bill of £1,369, Government documents show.

But that sum is forecast to rise significantly in order to fund more wind farms and new nuclear plants, rising carbon taxes and a new scheme to ensure there are enough back-up power plants when the wind doesn't blow. By 2020 such levies are forecast to total £141 a year – 11 per cent of an annual bill of £1,319 - and by 2030 they will hit £226 or 15 per cent of an annual bill of £1,524.[5]"

Public Opinion

The windfarm developers often point to national polls supporting renewable generation. For example a Department of Energy and Climate Change Public Attitudes Tracker in February 2014 showed that 77% of the public are in favour of the use of renewable energy sources to generate the UK's electricity, fuel and heat, with only 5% strongly opposed. This of course is the use of statistics in a way that Benjamin Disraeli complained of [6].

The wind industry and government energy departments do not seem to have reconciled that despite apparent high general levels of public support for onshore wind development in principle, specific projects often experience local opposition. Traditionally this difference in general and specific attitudes has been attributed to NIMBYism (not in my back yard) and engendered a dismissive

[4] http://www.telegraph.co.uk/earth/energy/windpower/8770620/Foreign-firms-reap-500m-a-year-in-subsidies-from-UK-wind-farms.html

[5] http://www.telegraph.co.uk/finance/personalfinance/energy-bills/11214562/Green-levies-on-energy-bills-to-double-by-2020-official-estimates-show.html

[6] "There are three kinds of lies: lies, damned lies, and statistics."

approach suggested by the use of this pejorative term. A sniff of the attitude *Let them eat cake* comes to mind. Evidence of the misuse of poor survey methodologies is increasingly bringing this public policy and wind industry approach into disrepute.

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. The public is exposed to heavy publicity about climate change, and the need for urgency of action. So it is not surprising that some respondents to opinion surveys opt for the virtuous response of generation by wind. But these surveys also demonstrate much uncertainty in public opinion that can easily be misinterpreted. Indeed, most respondents to well-structured national opinion surveys for instance will live far distant from such developments, and will have little understanding of their scale and impacts, both locally, and the oncoming cumulative effects on the nation's scenery.

Deference to populist opinion is not how society generally resolves complex value-based issues: why should wind power be different?

The report authors suggest that a survey of Strathnairn could be undertaken regarding current wind farm applications to test whether the DECC and Airvolution's optimistic views on public opinion are borne out. The Community Council could perhaps act as honest broker to ensure the various parties to the debate do not manipulate the survey to their own purposes. A Survey Monkey type approach could be inexpensively and speedily be undertaken and some mechanism could be built in to ensure no double voting or other survey manipulation was undertaken.

Employment

As Scottish Planning Minister Derek Mackay recently said "We want future planning decisions to give significant weight to the economic benefit of proposed developments, particularly the creation of new jobs."

It is worth understanding how much employment any proposed windfarm will create both within the Highlands and more specifically within the community that will bear the environmental impact most severely.

First however let us consider the wider picture.

A 2009 Spanish Study[7]

"We find that for every renewable energy job that the State manages to finance, Spain's experience .... should expect a loss of at least 2.2 jobs on average, or about 9 jobs lost for every 4 created, to which we have to add those jobs that non-subsidised investments with the same resources would have created.

The study calculates that since 2000 Spain spent €571,138 to create each "green job", including subsidies of more than €1 million per wind industry job. The study calculates that the programs creating those jobs also resulted in the destruction of nearly 110,500 jobs elsewhere in the economy, or 2.2 jobs destroyed for every "green job" created.

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[7] Study of the effects on employment of public aid to renewable energy sources Álvarez, Merino Jara, Julián March 2009 Univeristad Rey Juan Carlos - Madrid

In Spain's case, the minimum electricity prices for renewable-generated electricity, far above market prices, wasted a vast amount of capital that could have been otherwise economically allocated in other sectors. Arbitrary, state-established price systems inherent in "green energy" schemes leave the subsidized renewable industry hanging by a very weak thread and, it appears, doomed to dramatic adjustments that will include massive unemployment, loss of capital, dismantlement of productive facilities and perpetuation of inefficient ones."

The UK

In a 2011 study entitled The Myth of Green Jobs[8] it is pointed out that quite apart from reducing greenhouse gas emissions the other aim of mitigation policies is seen as involving not just costs to be borne for reasons of prudence, but rather a new path to prosperity. 'Green growth' is put forward as the key to sustained economic progress and the creation of new jobs. The Scottish Government along with others has very much taken this line.

- meeting targets for renewable energy in the Europe Union will create 2 million jobs across the EU (the EU Commission);
- a Green Deal involving insulation of houses, the installation of smart meters and other energy saving measures will create up to 250,000 jobs in the UK (Chris Huhne, Secretary for Energy and Climate Change); and
- the development of renewable sources of electricity generation in Scotland will create 7,000 jobs (the Scottish Government).

About 35% of total investment in renewables is usually translated, directly or indirectly, into wages and salaries, which is in line with wider business investment rates. However this is much lower that of other forms of infrastructure or government services where the percentage directed to wages and salaries is more like 70%.

Green energy policies may have a very small impact on the total level of UK employment in the short run and little or no impact in the medium or longer term. Applying any reasonable economic criteria, such policies are a really poor way of allocating public money (through subsidies) or private resources (through higher energy prices) to create jobs at the macro level – i.e. for the UK as a whole or for the EU.

As the potential costs of the UK's policy commitments have become clearer, the political rhetoric has shifted to emphasising the alleged economic benefits of greater reliance on renewable energy. The argument is that the promotion of renewable energy will "create" jobs in manufacturing or maintaining wind turbines and similar equipment. Of course, the fact that practically every other developed country in the world makes the same claim is studiously ignored.

Local Jobs

We recognize that some local firms will benefit from the preparation and installation of windfarm sites. By observing the significant flow of gravel laden lorries heading from Strathnairn's quarries to Aberarder, the quarry owner and the quarry workers must be receiving some significant income. Similarly the road preparation companies have undertaken significant work on the B851 and if Tomfat and Carr Ban went ahead no doubt the B861 would also have to be upgraded, which is an attractive road maintenance policy for the council it might be added. When the windfarm

[8] THE MYTH OF GREEN JOBS by Gordon Hughes GWPF Report 3 2011

components are delivered some heavy haulage and crane firms will also enjoy some lucrative carriage and installation.

As we know the lion's share of the value added in the current wind farms is enjoyed by the range of foreign firms who manufacture the metal monoliths and their engine and turbines. Danish, German and Spanish firms are apparently particularly active in the sector, although we have no knowledge of the specific intended supply chain for this proposed installation.

According to DECC energy figures for 2013, only 29% of the 11,685 renewable jobs in Scotland[9] result in onshore wind which was then providing 65% of Scottish renewable energy, suggesting that wind is a less efficient generator of jobs than other renewable energy sources. In brief we do not think the local employment argument for this installation holds much water.

The main point we would make is that the local employment benefit will be a small proportion of the build cost and will be relatively short-lived, whilst the impact on the landscape will be long term – indeed some would claim that the impact will be permanent and under anticipated conditions irreversible. We would suggest that the local employment argument does not strengthen this project application in any significant way.

Project viability

The government advises that planning authorities should consider, in consultation with the wind farm industry, issues such as wind speed, site access, ground suitability and other key environmental factors which could impact on development. This should ensure that broad areas of search are capable of accommodating a viable wind farm project.

The one thing that mystifies us is how Airvolution are happy in Carr Ban to in effect go down a hollow to a lochside, especially with large trees all around. Our understanding is that a wind turbine's productivity will increase significantly with height away from ground frictional and turbulence effects.

Additionally a concern locally is that the landowners may of course intend to cut down the trees to improve performance once the wind turbines are installed. When the woodland goes then the noise disturbance to residents will increase and the visual impact will be even more noticeable.

The Green Argument

One other consideration with regard to windfarms is how efficient are they both in producing power and in reducing CO2?

"Wind turbines start operating at wind speeds of 4 to 5 metres per second and reach maximum power output at around 15 metres/second. At very high wind speeds, i.e. gale force winds, (25 metres/second) wind turbines shut down. A modern wind turbine produces electricity 70-85% of the time, but it generates different outputs depending on the wind speed.

Over the course of a year, it will typically generate about 30% of the theoretical maximum output (higher offshore). This is known as its capacity factor. The capacity factor of conventional power

[9] Employment in Renewable Energy Scotland

stations is on average 50%. Because of stoppages for maintenance or breakdowns, no power plant generates power for 100% of the time[10]*."*

However in a Daily Telegraph report claimed in January 2011 that the John Muir Trust (JMT), one of Scotland's leading conservation bodies, has challenged the common assertion that wind farms run at an average of 30 per cent capacity over a year.

A study carried out for the Trust into the energy generated by dozens of wind farms, the majority of which are in Scotland, between November 2009 and 2011, found they actually ran at 22 per cent of capacity.

Campaigners insist the figures, drawn from data provided by the National Grid, challenge the role of wind farms as an efficient source of renewable energy. They said hundreds of wind farms had secured planning permission across Scotland based on inaccurate assumptions of their output. *"This analysis shows that over the course of a year, the average load factor fell well short of what the industry claims, yet the 30 per cent figure is peddled at every public inquiry into a proposed wind farm," said Helen McDade, head of policy at the JMT. "This data is needed to counter that hype."*

Others have joined the debate. A study, entitled *Wind Power Reassessed: A review of the UK wind resource for electricity generation*[11] in 2014, instead recommends pushing ahead with nuclear power and gas-fired power stations. Ben Southwood, Head of Policy at the Adam Smith Institute, said: 'Wind farms are a bad way of reducing emissions and a bad way of producing power. "They are expensive and deeply inefficient and it seems like they reduce the value of housing enormously in nearby areas."

Their analysis is based on a model UK wind fleet of 10GW nominal capacity. The model reveals that power output has the following pattern over a year:

- Power exceeds 90% of available power for only 17 hours
- Power exceeds 80% of available power for 163 hours
- Power is below 20% of available power for 3,448 hours (20 weeks)
- Power is below 10% of available power for 1,519 hours (9 weeks)

Yes only 17 hours in one year!

Long gaps in significant wind production occur in all seasons. Each winter of the study shows prolonged spells of low wind generation which will have to be covered by either significant energy storage (equivalent to building at least 15 plants of the size of Dinorwig[12]) or maintaining fossil plant as reserve.

The preceding deficiencies suggest the model wind fleet would require an equal sized fossil fuel generation fleet operating alongside it, especially during winter months.

The study was extended with another 21 sites located in Ireland and across the northern plain of Europe. Performance of the wind fleet in Ireland is slightly better than in the UK, but the northern European fleet (Belgium, Netherlands, Denmark and Germany) is much poorer. Integrating all these with Ireland and European interconnectors will do little to reduce the intermittency levels described above. European interconnectors may have other uses for grid management, but they will have little impact upon the mitigation of wind fleet intermittency and variability.

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[10] http://www.globalwindday.org/faqs/how-efficient-are-wind-turbines/

[11] Wind Power Reassessed: A review of the UK wind resource for electricity generation Dr Capell Aris for the Scientific Alliance and Adam Smith Institute

[12] http://www.electricmountain.co.uk/

The short-term (30–90 minutes) variability of wind generation is also studied and reveals swings in output far higher than would be expected from conventional generation. Swings of 10% of output are normal. This observation contradicts the claim that a widespread wind fleet installation will smooth variability.

In his 2012 study[13] Gordon Hughes went further.

1. *Wind power is a capital-intensive means of generating electricity. As such, it competes with electricity generated by nuclear or coal-fired generating plants (with or without carbon capture). However, because wind power is intermittent, the management of electricity systems becomes increasingly difficult if the share of wind power in total system capacity approaches or exceeds the minimum level of demand during the year (base load). It is expensive and inefficient to run large nuclear or coal plants so that their output matches fluctuations in demand. Large investments in wind power are therefore to undermine the economics of investing in nuclear or coal-fired capacity.*
2. *The problems posed by the intermittency of wind power can, in principle, be addressed by (a) complementary investments in pumped storage, and/or (b) long distance transmission to smooth out wind availability, and/or (c) transferring electricity demand from peak to off-peak periods by time of day pricing and related policies. However, if the economics of such options were genuinely attractive, they would already be adopted on a much larger scale today because similar considerations apply in any system with large amounts of either nuclear or coal generation.*
3. *In practice, it is typically much cheaper to transport gas and to rely upon open cycle gas turbines to match supply and demand than to adopt any of these options. As a consequence, any large scale investment in wind power will have to be backed up by an equivalent investment in gas-fired open cycle plants. These are quite cheap to build but they operate at relatively low levels of thermal efficiency, so they emit considerably more co2 per mWh of electricity than combined cycle gas plants.*
4. *Meeting the UK Government's target for renewable generation in 2020 will require total wind capacity of 36 GW backed up by 13 GW of open cycle gas plants plus large complementary investments in transmission capacity – the Wind scenario. The same electricity demand could be met from 21.5 GW of combined cycle gas plants with a capital cost of £13 billion – the Gas scenario. Allowing for the shorter life of wind turbines, the comparative investment outlays would be about £120 billion for the Wind scenario and a mere £13 billion for the Gas scenario.*
5. *Wind farms have relatively high operating and maintenance costs but they require no fuel. Overall, the net saving in fuel, operating and maintenance costs for the Wind scenario relative to the Gas scenario is less than £500 million per year, a very poor return on an additional investment of over £105 billion.*
6. *Indeed, there is a significant risk that annual CO2 emissions could be greater under the Wind scenario than the Gas scenario. The actual outcome will depend on how far wind power displaces gas generation used for either (a) base load demand, or (b) the middle of the daily demand curve, or (c) demand during peak hours of the day. Because of its intermittency, wind power combined with gas backup will certainly increase co2 emissions when it displaces gas for base load demand, but it will reduce co2 emissions when it displaces gas for peak load demand. The results can go either way for the middle of the demand curve according to the operating assumptions that are made.*
7. *Under the most favourable assumptions for wind power, the Wind scenario will reduce emissions of Co2 relative to the Gas scenario by 23 million metric tons in 2020 - 2.8% of the 1990 baseline – at an average cost of £270 per metric ton at 2009 prices. The average cost is far higher than the average price under the EU's Emissions Trading Scheme or the floor carbon prices that have been proposed by the Department of Energy and Climate Change (DECC). if this is typical of the cost of reducing carbon*

[13] **Why is wind power so expensive?** an economic analysis by Gordon Hughes

emissions to meet the UK's 2020 target, then the total cost of meeting the target would be £78 billion in 2020, or 4.4% of projected GDP, far higher than the estimates that are usually given.

8. *Wind power is an extraordinarily expensive and inefficient way of reducing Co2 emissions when compared with the option of investing in efficient and flexible gas combined cycle plants. Of course, this is not the way in which the case is usually presented. Instead, comparisons are made between wind power and old coal or gas-fired plants. Whatever happens, much of the coal capacity must be scrapped, while older gas plants will operate for fewer hours per year. It is not a matter of old vs new capacity. The correct comparison is between alternative ways of meeting the UK's future demand for electricity for both base and peak load, allowing for the backup necessary to deal with the intermittency of wind power.*

Analysis of the actual performance of wind farms and the difficulties of managing large amounts of intermittent generation ought to prompt a reconsideration of the targets rather than an ever more vigorous digging of possible policy black holes. In the UK there is an installed capacity of over 9000 MW of onshore and offshore wind energy according to the National Grid. However on a snapshot sample taken on 13th December 2014, wind was producing 1281 MW suggesting an efficiency of approximately 15%.

The authors are not qualified to arbitrate on these various claims. However we are concerned that all this sacrifice is potentially for so little gain, and that once again the precautionary principle should apply.

The government's 2020 top down target[14] is almost wholly arbitrary and self inflicted with no apparent bottom-up targets about wind versus other forms of renewable. With wind attracting 92% of 2013 renewable 'investment' it seems that government and the population have now lost control of a process that has no easy self-correcting mechanism, apart from some sort of moratorium, or peasant's revolt.

More haste less speed is an old but wise saying that the people of the Strath understand very well, and suggest Highland Council should also adopt as the temporary guardians of the region's timeless heritage.

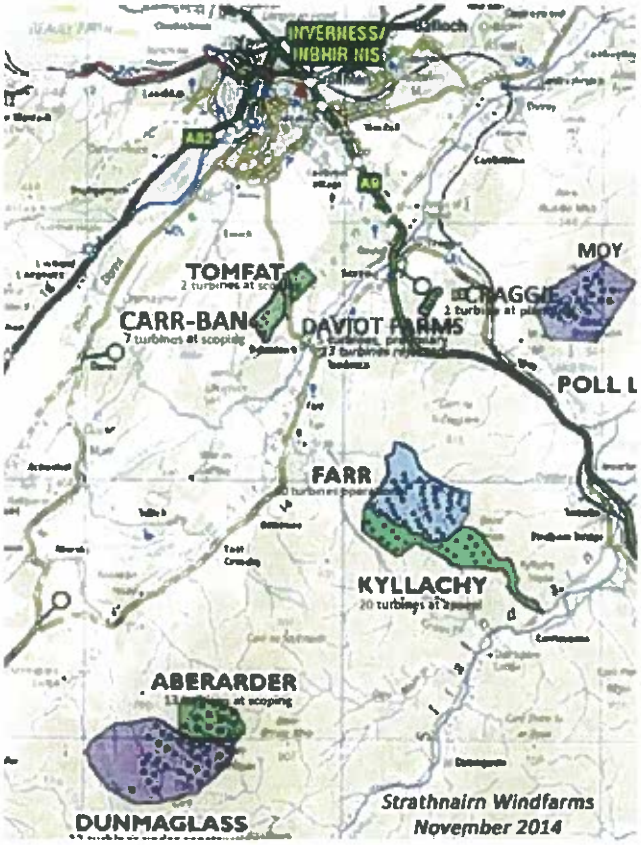
Cumulative Effects

Airvolution reassures in its communication with local residents "that it is also worth re-iterating that the approval of one wind energy scheme does not set a precedent to approve more within the locality. Each wind farm planning application is determined by the local authorities on the basis of its independent impacts and benefits."

However the Upper Strathnairn community is beginning to feel besieged with yet more Wind Farm developments encroaching ever further into our community. The strong feeling is Strathnairn has already given more than its fair share to the collection of wind energy. The further proliferation and cumulative impact of these developments will incrementally degrade our Strath. Death by a

[14] The Scottish Government exceeded all expectations and increased its renewable energy target to 100% by 2020. First Minister Alex Salmond pledged to move "still faster and further" to secure Scotland's place as the green energy powerhouse of Europe. Previous to this announcement, the country's target was set at the equivalent of 80% electricity consumption, with a 31% interim target for 2011.

thousand cuts was a form of torture and execution originating from Imperial China and now from the policy of our own government(s[15]).



Upper Strathnairn windfarms – actual and planned

Cumulative landscape impacts from wind turbines are the effects of a proposed development on the fabric, character and quality of the landscape; it is concerned with the degree to which a proposed renewable energy development will become a significant or defining characteristic of the landscape. Criteria we are assured should include the sensitivity of the landscape and visual resource and the magnitude or size of the predicted change.

Some landscapes are more sensitive to certain types of change than others. The pretty rural idyll that is Strathnairn may not be formally protected as an area of outstanding natural beauty (these are bureaucratic arbitrary delineations in any case). It may not have the scale of Loch Ness or Glen Affric, and is more of a Hobbiton rather than a Mordor, but to its inhabitants it is their little bit of heaven and is peerless in its charm.

Sequential effects on visibility occur from a variety of viewpoints with regard to the Carr Ban application. Taking the B851 from the A9 one will see the windfarm rear up out of the horizon and it will frame the sightlines for several miles driving . The pleasant scale and sweep of the Strath will be dwarfed by these leviathans. Driving on the B861 from Inverness the turbines will emerge as one reaches the summit of Drummossie and will be very visible particularly to the right hand side especially when the trees will be harvested. The drive from Essich Farm to Dunlichity will from about half way across the stretch be framed by the turbines on the right sitting behind the diagonal views down to the lonely Loch Bunachton. These journey scenarios

[15] United Kingdom Department for Energy and Climate Change and Scottish Government Department of Energy, Enterprise and Tourism.

will be also experienced by the very many cyclists who use these roads...indeed many actually cycle this very route and the windfarm will predominate as a centre point for their circuit.

As has been intimated the more homely dimensions of Strathnairn and its more gentle slopes are not able to comfortably bear the large turbines envisaged. They will rear up from behind hills giving viewers a sense of there being something foreboding and significant lying beyond the hill, sky and treeline.

There are many existing viewpoints around the Strath which will look down on this facility if it is developed. The top of Brin Rock is one popular location (one of the cradles of British rock climbing apparently). Although the Glac a ChChatha is also a favoured viewpoint. The top of Meall Mor; Meall nu Fuar ghlaic and Beinn Dubh, which already have significant views of Farr windfarm. However Creig Bhuide, Creag a Clachain will have much closer views of the turbine complex.

However as the proposed windfarm is placed at approximately 230 metres altitude and much of the affected habitation in Strathnairn is at approximately 180 metres in altitude, there will be many places in the strath where viewers will be looking up and north to see the turbines wheeling against the sky. The turbines will appear to dominate many of the residential areas on the south side of the Strath as they look northward.

Property Prices

These are typical local and recent estate agent sales scripts, that will not be possible in future, if the local windfarms go ahead.

Farr Church represents a unique opportunity for one to purchase a "grand design" type church conversion set in the hamlet of Farr within easy commuting distance of Inverness City Centre and Dalcross Airport. Set in approximately ¾ of an acre of ground, the property offers stunning views across unspoilt countryside.

The Old Manse of Farr is situated in a peaceful rural location in the village of Farr. Farr has an active local community with a primary school and village hall as well as a local shop and post office.
The house is ideally situated for people who appreciate a beautiful rural location but require good commuting. The A9 is just over 3 miles away and Inverness city centre is only about 8 miles from the house. Inverness Airport (12 miles) has a variety of domestic and European flights. Inverness has an excellent range of professional services, high street shops and leisure facilities including a marina, football stadium, leisure centre, a museum and art gallery and four golf courses.
The Old Manse is surrounded by beautiful scenery and is ideal for access to country pursuits from walking, climbing, sailing and golf to fishing, shooting and stalking.

More research needs undertaken on the potential specific asset price effects to be expected in the Strath.

Summary

This report reflects on the evolution of policy and offers scepticism about being involved in unseemly haste. At several junctures the reports suggests the appropriateness of applying the Precautionary Principle in relation to many of these matters. The report highlights the important role of local residents, the Community Council and Highland Council in acting as counter balances to the policy enthusiasms emanating from the centre. A brief consideration of the money trial offers more

grounded insights into the motivations and momentums of the industry. The difficulties of truly gauging public opinion are highlighted and a suggested resolution to different views on this matter is offered in this planning application process. The job creation test is considered in relation to this specific planning application. Some questions surrounding project viability are raised but not answered. Some countervailing perspectives to the Green rationale for these projects are offered not as received wisdom, but potentially as cautionary correctives. A light treatment on cumulative effects of windfarm development is briefly undertaken as is a brief consideration on local asset values.

Other Action Group volunteers will consider the Carr Ban windfarm application from other perspectives.