### *Q22*

### No.Protecting and enhancing Scotland’s nature may on occasion be in conflict with developments which are said to contribute to reducing climate change.As two examples, - The aim to reduce carbon emissions by consenting green hydrogen production facilities will a major requirement on the provision of large quantities of clean water – at a time when SEPA acknowledges that climate change is producing increasing periods of water shortage in Scotland. Is this water demand to be at the expense of public drinking water and agriculture? The building of industrial windfarms may have predictable risks of significant environmental impacts such as degradation of groundwater and private water supplies – which is contrary to protection under the Water Framework Directive transposed into Scots Law.Providing solutions to reduce carbon emissions may therefore conflict with enhancing and protecting Scotland’s nature and natural resources.Where such conflicts exist, other considerations external to planning policies should prevail such as complying with international agreements (e.g. the World Health Organisation targets or the Water Framework Directive)

###  *Q23* **Policy 1: Plan-led approach to sustainable development**

This policy repeats what is already in the legislation, (with the addition of the UN Sustainability Goals).
The Town and Country Planning (Scotland) Act 1997 (which was updated in 2019), states, “The purpose of planning is to manage the development and use of land in the long-term public interest”. This policy does not actually provide any further policy or guidance on the plan led system. The policy should state that developments which stray from the plan should be actively and strongly discouraged. Ignoring the approved plan would otherwise defeat the purpose of development plans, local place plans and reduce public confidence in what should be a transparent, plan led system. To consent projects which are contrary to the approved plan also wastes the time and resources spent by planners making up to date plans and in particular, the time and effort of the public who in addition to their ‘day jobs’ respond to lengthy and complex consultations on Local Development Plans in a voluntary capacity with the expectation that their contributions are properly considered and valuable.

###  Q24 **Policy 2: Climate emergency**

If we are serious about planning to tackle the climate and nature emergencies, it stands to reason that we should not be planning for, or consenting to, any new development that will contribute to climate change or the loss of biodiversity. Onshore Wind farms contribute to both.

If the benefit is to save the planet by reducing carbon emissions, then it should be remembered that Scotland contributed at its worst, to only 0.1% of global carbon emissions. Meeting and going beyond Scottish political targets of net zero carbon emissions will not save this planet but it may cause irreparable harm to Scotland’s environment and landscape heritage. Current SG policy and measures taken to reduce carbon emissions in the energy sector have actually significantly increased Scotland’s carbon emissions from the burning of fossil fuels over the past five years.. (SG 2021 Energy statistics ) It would be wrong for the planning system to ignore the bald facts of Scotland’s increasing energy carbon emissions that have resulted from the current policy of increasing our dependence on renewable intermittency .
 It would also be wrong to ignore the severe socioeconomic impacts of current policy on both the fragility of the level of current renewable dependence and the extraordinary increase in electricity prices caused in part by the need to balance renewable energy production with imported gas. Scotland has already met its domestic requirements for energy production from renewables. Consenting further developments are for the export of energy and commercial profit.
 Scotland has a higher and increasing percentage of its population in fuel poverty than England or Wales. This policy should not just consider measures to address climate change but consider the socioeconomic effects that consenting such developments will have on Scotland’s people

###  *Q25* ***Policy 3*****Nature crisis**

As currently worded, Policy 3a) begins by stating “a) Development plans should facilitate biodiversity enhancement, nature recovery and nature restoration across the development plan area”. The use of the word ‘should’ means that this is optional and ‘facilitate’ does not signal the strong, leading position that LDPs should take. This statement must be strengthened, for instance the wording could be changed to say ‘Development plans must support and encourage the delivery of biodiversity enhancement, nature recovery and nature restoration across the development plan area’.
 All public bodies have a legal duty to further the conservation of biodiversity and this must be reflected in local development plans

 Policy 3 should be amended to echo Policy 2a), for instance by stating ‘When considering all development proposals significant weight should be given to the nature crisis’. Biodiversity policies are to be given added significance and weight.

A policy should be added that requires proposals and plans to take into account surrounding pressures and cumulative impacts in a cross boundary approach across several local authority areas..

 A Scottish Nature Network should be included in NPF4, so there is a strategic approach to an ecological network across Scotland linking nature rich sites. This would help to deliver enhancement, protecting existing links and directing enhancement to areas where it could help the network grow and develop. Without inclusion in NPF4 there is a greater risk local authority approaches won’t be coordinated

NatureScot and RSPB agree that bird strike is more likely by wind turbines with low ground clearance as a greater number of species fly at this height but due to lack of resources they are now unable to comment on smaller scale or single turbine developments unless a protected area or species is involved. NatureScot should have its funding increased to enable them to comment on any turbine application irrespective of size or location.

The enhancement of biodiversity in planning policy must be evidence based within defined time frames and sanctions attached to consents if post development monitoring demonstrates that predicted improvements set out in planning applications are not met. A failure to introduce sanctions embedded in a consent will result in admirable planning policy intentions which are simply ignored in reality by developers and potentially by hard pressed local authorities

Windfarm sites should be subject to five yearly independent ecological surveys (paid for by the developer) to monitor the effectiveness of any scheme promoted in the environmental statement or in planning conditions to improve biodiversity against the original surveys of mammals, fish and birds, as well as groundwater dependent ecosystems (GWDTE) conducted by the developer for the Environmental Statements.

Only by doing such surveys can the SG assess which mitigation measures are actually effective and whether claims by any one windfarm developer/operator, that biodiversity has improved be properly validated. Such studies will provide valuable longitudinal data on the health of Scotland’s wildlife in the setting of rural industrialisation to meet net zero targets

### *Policy 4 Q26* **Human rights and equality**

This policy should recognise that to achieve equality in the planning system communities should have the same rights and opportunities as developers. This includes:

the right to appeal the planning decisions that are guided by the policies contained within NPF4;

empowering local authorities to ensure local communities are given sufficient professional help to engage in the planning process;

appointing an independent advocate to ensure that local participants contributing to the planning process are not bullied and intimidated during public inquiries.

*“The siting of wind farms should only be permitted where*

* the development site is in an area identified as suitable for wind energy development in a local development plan; and
* following consultation, it can be demonstrated that all the planning impacts identified by **affected** local communities have been satisfactorily addressed and therefore the proposal has community backing.
* There is no significant risk (as defined under Environmental Impact Regulations) to human rights, including Article 8 and the right to clean drinking water recognised as a human right by WHO in 2010
* Developers are willing to compensate residents for loss of property value and residential amenity.  <https://www.telegraph.co.uk/property/uk/wind-farms-knock-8pc-house-prices/?fbclid=IwAR0Vxvn_gzoW_BVCRVCd1hcc-kzv5sN-PZIF7pppnOrJYmgcXMuSDh4JHaU>

*To impose a wind farm otherwise would  be contrary to Policy 4 as Human Rights and Equality would be denied.*

This policy is, in general, based on meeting the requirements and wishes of urban populations and fails to address the needs and amenity specific to rural and remote populations and individuals. In this regard, this policy discriminates against minority rural residents.

Policy 5 Q27

This policy fails to deliver specifics on community wealth building that encompasses the wishes of rural populations. Instead, planning policy seeks to impose decisions on rural residents which may have adverse effects on the long term viability, economy and cohesion of rural communities. Community wealth building objectives should be those determined by residents directly affected by a development; not objectives set by other communities or groups suffering no adverse impact from a development.

### Policy 6 Q28 **Design, quality and place**

No.
It is an oxymoron to have a planning policy which states, *“ a) Development proposals should be****designed to a high quality****so that the scale and nature of the development contributes positively to the character and sense of place of the area in which they are to be located.”,* when it is patently obvious to the public that multiple wind turbines over 200m in height in rural and wild landscapes are not in scale and not natural to the sense of place in which they are to be located. E.g. A recent windfarm application in East Lothian is felt to be suitable because the applicant describes the area as ‘feeling’ remote, even though this countryside is in close proximity to Edinburgh.It is very obvious that the six quality features for a successful development proposal are based on an urban wish list.
Industrialising remote rural areas, creating permanently scarred hillsides and increasing soil erosion with thousands of miles of new access roads does not meet the six design qualities in this planning policy and yet such applications that are distinctively environmentally unpleasant are consistently approved. Applications that remove historic stone farmsteads and rural homes in favour of wind turbines are also approved. How does that fit with the aspirations of this planning policy?Wind farms are detrimental to the character and appearance of the surrounding area and cause noise, flicker and shadow throw. It is therefore not possible for ***this policy to enable the planning system to promote design, quality and place* unless no more wind farms are to be consented.**

**Policy 7: Local living Q29: Addressing Local Living
No.

There is nothing in this planning policy which addresses the expansion of dormitory towns with large areas of new housing to provide for large cities such as Glasgow. This causes local services such as schools and GPs to be overwhelmed with major adverse impact to existing rural residents.
Far from creating 20 minute neighbourhoods, current policy is increasing car usage not just for commuting, but for accessing basic services.
‘Super schools’ are being created with closure of small schools in rural areas so that parents have further to go to access their child’s school.

Once again this policy fails to address the very real challenges of disadvantaged rural and remote communities.
The loss of a local GP practice, school or shop is inconvenient in a town. It can be devastating in remote communities.
There are large areas of Scotland with little or no public transport and this planning policy does nothing to reverse the hardships that current planning policy is inflicting on rural residents.**

**Policy 8 :  Infrastructure First
Yes.If this is properly enforced, it should remedy the deficiencies in current planning policies outlined in the answer to Q 29.
The issue, as with all planning conditions, is whether planning policies and conditions are properly enforced, such that the public can have confidence in the planning system.**

### **Policy 12 Q34 Blue and green infrastructure, play and sport**

No windfarm could ever be compatible with the uses, natural habitats and character of a regional and country park. Long terms risks of siting wind turbines in country parks will include direct dangers to the public of fire and falling debris and ice, apart from short term dangers and restrictions related to construction and decommissioning. An industrial development such as a wind farm will not help to make existing public parks **greener, healthier, and more resilient to climate change.**

**There should be an obligation for every new windfarm to create new public core path access routes through the site to help reach this planning policy aim of creating increased and new green infrastructure . This should not be a ‘wherever possible’ opt out as stated . Such new core path routes will provide lasting public benefit and encourage local opportunities for recreation.**

### **Policy 14 Q36 Health and wellbeing**

**No**

Development proposals that would result in unacceptable levels of **noise** should not be supported. Separation distances from settlements and individual properties need to be substantially increased particularly to accommodate the much larger turbines which are being proposed currently along with a complete overhaul of ETSU-R-97 rather than just a review which we believe is currently taking place. However noise level is not the only reason for complaint to Environmental Health Departments. Tonal noise and amplitude modulation (noise character) are the most common reasons for complaint about wind turbines. Small turbines generate as many, if not more, complaints as large ones due to their faster rotation speed which makes a noise similar to a helicopter and also because they are not EIA development and therefore applications undergo less scrutiny. <https://scotlandagainstspin.org/2018/02/noisy-bergey-excel-10-wind-turbine-video/>

Cumulative noise character is also another problem causing extreme annoyance for those who live with a number of different sized turbines, all emitting different noise characteristics. This has been a cause for concern in areas with a high density of small, medium and large wind farms and single turbines, such as East Renfrewshire. Therefore noise impact assessments, including cumulative assessments which consider noise characteristics as well as noise levels must be requested for all developments, particularly where exposure to noise of various different kinds are likely to arise.

WHO Environmental Noise Guidelines for the European Region – Executive Summary (under Recommendations) states **“Specific recommendations have been formulated for … wind turbine noise …”**  The coloured box which follows, headed “Wind Turbine Noise: Recommendation” gives further details of these recommendations.

Table 36 shows that, **at a level of 45dB(Lden), 10% of people are highly annoyed.   Annoyance is a critical health outcome** – see p18, Table 3 of WHO

“Health Effects of Wind Turbines “Report by Salford University, March 2013 states:

* The review shows there to be evidence for annoyance due to WT noise.
* There is also some evidence for sleep disturbance which has found fairly wide, though not universal, acceptance. It should be noted that environmental noise from other sources such as road traffic and aircraft noise is a known causes of annoyance and sleep disturbance **so to find these effects from WTs is not unexpected.**
* Some authors label these effects as health effects and others do not.

The Claimants in the Bald Hills windfarm nuisance case in Melbourne, Victoria, Australia have recently been successful after a three week trial in securing an injunction against the Bald Hills windfarm, and in obtaining an award of damages and aggravated damages for the noise nuisance held to exist. <https://scotlandagainstspin.org/2022/03/claimants-successful-in-baldhills-windfarm-nuisance-case-in-australia/?fbclid=IwAR10bE5RFFTsgLeqC8NnmKJuWy1LZ2VM5zazE_qsVBobpCnFWa2miVKjmIU>

In 2019 Rosemary and Andrew Milne won their nuisance case against their neighbour’s turbine in Aberdeenshire. <https://scotlandagainstspin.org/2019/03/andrew-and-rosemary-milne-v-stuartfield-windpower-ltd-conclusion/>

Ed and June Hall from the Highlands were successful in having their neighbour’s turbine removed due to Nuisance <https://scotlandagainstspin.org/2017/03/apology-from-highland-council-to-ed-and-june-hall/>

In 2013 William and Aileen Jackson from East Renfrewshire were successful in their Nuisance case resulting in their neighbour’s turbine being removed. <https://scotlandagainstspin.org/2013/05/successful-noise-abatement-order/>

Significant adverse health impacts are likely where a windfarm is constructed in water catchments providing for both public and private water supplies. Whilst Scottish Water now has a blanket policy of objecting to proposed industrial turbines in public water catchment areas, owners of private water supplies (PWS) have no such protection.
There are over 100,000 vulnerable PWS in Scotland, mostly in rural areas. The Scottish Government ( and World Health Organisation) recognises that PWS can be a source of severe public health disease, such as E.Coli 0157 causing widespread illness and death. Industrialising previously unspoilt rural areas with renewable infrastructure and supporting grid infrastructure has been shown to have major effects on both the quality and quantity of water available to rural residents with potential for severe health impacts.
Greater emphasis should be embedded in planning policy to ensure proper protection and monitoring of PWS which is at risk from windfarm development. Such protection should not be set out in planning conditions to be enforced at the discretion of a local authority, but be embedded in legislation and inform the initial granting of consent.
Current SEPA guidelines based on proscribed buffer distances from infrastructure and excavation are not evidence based for the level of construction and excavation currently associated with windfarm or grid interconnector construction. Severe impacts on PWS have occurred well outside SEPA’s buffer distances. Planning policy for projects with likely adverse impacts on hydrology must be evidence based for the construction activity proposed.

The emission of microplastics with a high content of Bisphenol-A caused by leading edge erosion of wind turbine blades, is considerable and a public health concern. More research is urgently required.

<https://stax.strath.ac.uk/downloads/8336h217s>

<https://scotlandagainstspin.org/download/25372/>

<https://www.theguardian.com/environment/2022/mar/24/microplastics-found-in-human-blood-for-first-time?fbclid=IwAR0G_sW5eaX2nj_ulA4GyG9io5E6JT29vPYcH5CC0pzogJV0kWSVagVHj8o>

We suggestthat **where any degree of adverse health effects is likely to** **occur**, development should not be supported. Maintaining good public health is paramount. A health impact assessment should therefore be required for all proposed turbine development.

Policy 15 Q36  **Safety**

**No.**
There is a direct conflict with policy 19 – Green energy, in which hydrogen production and battery storage have presumed support, but without any consideration of public safety for adjacent residents, the wider public and workers in that policy when considering consent.

There are now frequent ‘bolt on’ applications with on shore wind farms for battery energy storage systems (BESS) or for green hydrogen production and storage, but without required detailed plans or environmental statements or disaster management plans submitted in support of those parts of an on shore windfarm or solar park application. BESS units appear to be regarded as benign, environmentally friendly energy storage units of no planning concern  by planners and consenting authorities.

Environmental Impact regulations (The Town and Country Planning (Environmental Impact Regulations) (Scotland) 2017 - s.4 (4), Sch 3. 1 (f), Sch.4. 5.(d), Sch 4 8. and The Electricity Works (Environmental ImpactAssessment) (Scotland) Regulations 2017 s.4 (4), Sch 3. 1. (f), Sch.4. 5.(d), Sch.4. 8. ) require that potential disasters and their potential environmental effects, their mitigation measures and the related  emergency response arrangements are provided in the EIA statement. Yet this does not currently occur and there is no provision in this Policy 15 to ensure that this does happen.

Hydrogen is an extremely explosive gas. Production of green hydrogen by electrolysis of water requires vast amounts of potentially scarce clean water and it is extremely energy intense both to produce and liquefy green hydrogen. Electrolysis requires large quantities of corrosive lye added to the water as an electrolyte – requiring environmental assessment as a toxic chemical.
Liquid hydrogen requires very high pressure containment and it is a very corrosive to steel. Due to the explosive hazard, Hydrogen storage (greater than 2 tons) requires consent under the existing Hazardous substances consents regime, which requires Health and Safety assessment in addition to emergency services assessment.

BESS units are subject to spontaneous combustion with release of toxic environmental gases and liquids, with danger to emergency services and the wider public and workers.
Such fires and explosions have been documented all round the world, including two of the most modern and largest BESS units in 2021 in the USA and Australia. Fires have occurred in UK BESS units, such as in Liverpool 2021. Thousands of electric cars being transported from Germany to the USA in February **2022** caused a spontaneous lithium battery fire, causing loss and sinking of the merchant ship Veronica Ace.

Such planning applications for green hydrogen production and storage and for BESS units should not be deemed supported policy under Policy 19 and simply  ‘bolted on’ to other ‘on shore wind’ or solar energy planning applications without full compliance with existing EIA regulations and hazardous substances consent regulations.

Policy 15 is **inadequate** and does nothing to exclude the possibility of life threatening danger to existing rural residents by sanctioning unequivocal support for green hydrogen and BESS.
Policy 15 says, “Applications regarding the presence of hazardous substances should take account of the potential impacts on surrounding populations and the environment” (Italics added)Surely public safety is paramount. **At the very least, policy 15 should be redrafted to replace ‘should’ with ‘must’**

Policy 17 Q38 **Tourism**

**No.**

**We certainly want to inspire people to visit Scotland, and to support sustainable tourism which benefits local people and is consistent with our net zero and nature commitments. This is however, unlikely to happened** when there is no acknowledgement that there is likely to be adverse effects on rural tourism from the industrialisation of Scotland’s landscapes by wind turbine development caused by the ever increasing proximity to villages, towns and hotels/B&B establishments.

 There is no consideration in this planning policy that unspoilt remote rural hospitality locations once attractive to tourists, have now become unattractive, predominantly due to overwhelming noise and visual impacts from huge numbers of industrial wind turbines

What we are seeing at the moment is the tip of the iceberg. If the number and height of onshore wind farms continue to increase (as proposed by the Scottish Government), this will undeniably have a detrimental effect on tourism.

There is no enforced statutory protection even for popular existing tourist facilities, such as core paths and rights of way if a local authority decides it no longer wishes to support this. E.g. The main, well maintained and accessible core path CP lV10 from Kilmarnock to access the 150km amenity network at Whitelee windfarm was removed in 2021 to support a new windfarm development by East Ayrshire Council
There is no protection or support for privately funded and supported tourist attractions such as the Dark Skies observatory in Dumfries and Galloway, which was burnt down in 2021.

The recent SG ‘Outlook Tourism Assessment 2030’ publication, which looks at the pressures and impacts on rural tourism, the mainstay of many remote rural economies in Scotland, does not mention windfarms or turbines at all, and of the many glossy photographs, there is not a single turbine in sight despite the current Scottish on shore windfarm capacity of over 8GW in rural areas!
The failure to address such impacts in this planning policy is despite the concerns of such industrialisation expressed by numerous rural hospitality businesses.
In effect, Policy 17 reflects Scottish Government policy of closing eyes and ears to the adverse effects of industrialising Scotland’s rural landscapes over the race to achieve net zero.
Once again, the pervading theme of this NPF4 is focussed on dealing with urban issues and not addressing the concerns and planning pressures felt by rural and remote communities.

Policy 19 Q40 **Green Energy**

No

Since publishing the draft NPF4 (Nov 2021) the Scottish Government has succeeded in its offshore wind leasing auction. The original target for the offshore auction was 10GW. As announced in Jan 22 the auction has accepted bids for nearly 25GW of capacity. Given the level of offshore wind, now released, it means that the need for onshore wind farms is substantially reduced.

Scotland has already met its target of providing 100% of electricity demand from renewables; there is no justification for increasing capacity further, given that the evidence from Scottish Government data is that this will increase carbon emissions over the next decade. In effect, further increase of windfarms, beyond what is needed to provide for Scotland’s energy needs, will increase carbon emissions such that the reality of net zero becomes an ever more impossible achievement

 Additional capacity from new windfarms, enlarging existing windfarms with repowering and consenting extensions will add further to Scotland’s carbon emissions in the form of carbon emissions from manufacturing, construction and transport of imported turbines, and from the increasing problem of required recycling and disposal of used components. It may be that this government discounts carbon emissions generated in other countries caused by activity in this country. That is false accounting and will not save the planet.

There are economic attractions in repowering existing sites, as some existing windfarm infrastructure may be reused, but the reality is that the move to larger, fewer and more efficient turbines results in a different windfarm footprint with new turbine and crane foundations which will still be built on deep peat, as per the original consent. Nature Scot (SNH) consider any peat >1m to be deep peat.

Repowering is an opportunity to evaluate the environmental impacts of an existing windfarm which may not have been understood or properly considered when the windfarm originally gained consent. Many older windfarms were built on deep peat before the value of peat as a carbon sink was recognised. (e.g. One million cubic metres of peat were excavated to build the original Whitelee windfarm in 2006.Those turbine foundations were often on peat more than 8 metres deep. (East Renfrewshire Council Whitelee windfarm construction facts) Each metre of peat takes a thousand years to form and is essentially irreplaceable over the term of this Government)

If there were underestimated environmental impacts associated with the original windfarm such as effects on groundwater and private water supplies, then it is not a suitable site for repowering and redevelopment unless repowering is confined to replacing existing turbine components. For these reasons and many others, repowering applications should still be subject to full planning scrutiny, as required under Environmental Impact Regulations.

Repowering is an opportunity for developers to reengage and be judged by local communities. Those developers/operators who have worked consistently and effectively with host communities over the lifespan of an existing windfarm will have nothing to fear.

The SG considers that the increased transmission charges to on shore windfarm developers in Scotland is a barrier to development.

 That is not borne out by figures which confirm that the majority of the UK’s on shore capacity is already located in Scotland; 8.4GW of a total UK onshore capacity of 14GW (2022 figures).

It is of concern that SG considers the profit profile for largely foreign owned and offshore wind development companies and their investors ahead of costs to UK consumers of expanding national grid connections.

It is also of concern that the SG is considering proposals that promotes expansion of overhead grid lines using the Scottish Ministers powers to automatically award consent, perhaps regardless of public and environmental concerns. It is not appropriate planning policy that there is deemed consent for such proposals.

It is worthwhile examining the costs and benefits of one of the most contentious power lines to be built in recent years:

The new 137 mile Beauly Denny transmission line (opened 2015) cost £820 million, replaced a previous 132kv line and was built to export power from northern Scotland's on shore windfarms both built, consented and those that might be built in future, to provide power to the rest of GB. (Transmission Charges. An overview of charges for Use of the GB transmission system. SHET Feb 2021)

Although this project was paid for by Scottish Hydrolectricity (SHET) and Scottish Power, OFGEM **allowed these costs to be recouped from its customers.** (Tobiasson, W., Beestermöller, C. & Jamasb, T. Public engagement in electricity network development: the case of the Beauly–Denny project in Scotland. Econ Polit Ind 43, 105–126 (2016). <https://doi.org/10.1007/s40812-016-0030-0>)

Those grid expansion costs are therefore ultimately paid for by electricity consumers.
Direct charges by National Grid to domestic consumers average £23.19 (2020/21), *excluding charges* from energy suppliers and providers (eg. social and environmental charges – subsidies, which account for more than 20% of a consumer bill (2019/20) (Figures from National Grid. Electricity Transmission. Performance 2019/20)

The National Grid power lines transmit at up to 400kV. (National Grid information) A 100 mile (160 km) overhead line at 345 kV carrying 1000 MW of power has losses of 4.2%. This is the difference between what a windfarm might produce and what the operator (and consumer) pays for and the actual amount of electricity reaching customers.

Ignoring generation losses from windfarms even more northerly than Beauly, the 137 mile Beauly-Denny line may therefore experience actual **electricity losses of more than 4%.**

It is only right that windfarm operators benefiting from natural and cheap wind resource in northern Scotland, far from the point of use**, who are getting paid for electricity which will never reach consumers,** using a transmission line paid for by the public, refund some of their profits back to consumers by paying enhanced transmission costs to be able to exploit the wind and landscape to operate in Scotland’s remote unspoilt rural areas.

OFGEM has as a core principle that it needs to protect consumers, as well as to help facilitate net zero ambitions. It will not protect vulnerable consumers by facilitating further expensive grid transmission lines to provide more renewable energy than can be consumed in Scotland, if a) these costs to facilitate commercial profits associated with export of electricity are to be passed onto consumers and b) if there is inordinate loss of the electricity which is again passed onto consumers.

The SG considers that the climate emergency has ‘overtaken’ the existing logic and design of the UK’s National Grid and charging system and that the needs of the renewable industry should rewrite the design and charging system of the National Grid.
There is lack of cognisance of development of alternative nuclear power via Small Modular Reactors (SMRs) which will be introduced in England nearer centres of demand at cheaper cost for consumers than importing more expensive low carbon renewable power from remote areas of Scotland. The UK Government has invested £210 million in SMRs as part of the UK Green Industrial Revolution strategy, with the first SMR expected to go live in approximately ten years.

Where is the logic that consumers in UK should pay more for intermittent renewable wind generation from a distance, paying for energy loss that occurs with each km of transmission, as well as increasing costs of building further transmission infrastructure, when advances in nuclear power generation will be just as effective, more reliable in decarbonisation, help to meet net zero targets, cost less and have less impact on rural communities and the environment?

The EU now accepts that nuclear generation is low carbon and should be included in Member State’s energy mix to zero transmission. ( EU announcement 01/01/2022)
Whilst it may be SG policy to abhor any form of nuclear power generation in Scotland, it behoves policy makers to look south of the border to examine what market there would be in future for export of Scottish on shore wind electricity.

Increasing numbers of windfarms in Scotland are being consented with co location of Battery Storage (BESS units). There is no evidence underpinning the conclusion that BESS units reduce the costs of electricity. The scientific evidence is that BESS electricity is currently more expensive than any other type of electricity provision. There is no evidence of how long BESS units are likely to be able to supply Scotland’s needs in the event of a lack of wind. These are essential figures before widespread adoption of this expensive, potentially toxic and time limited technology is justified and widely adopted.

There should not be a planning policy of deemed support for all forms of renewable energy development and energy storage without asking essential those questions which have not yet been answered by the renewable industry.

Despite this, the concept of battery storage and energy storage is to be commended as long as appropriate economic, environmental , safety and carbon calculations are included in the Environmental Statements submitted by developers. (A requirement under EIA Regulations). That does not currently occur.

BESS units are subject to spontaneous combustion with release of highly toxic by products. Such fires have occurred world wide, including some of the largest and highest profile units more recently in California, Arizona , South Korea , Australia and the UK 2021 (Liverpool). If there is to be public support it is essential that such risks are examined and mitigated in the planning process and consent.

Decommissioning costs and recycling of potentially toxic battery components must be included in planning applications given maximum battery life from new of approximately 10 years, depending on use. Currently, used lithium battery components cannot be completely recycled (Life cycle cost analysis for BESS optimal sizing. 2016 .Marchi B. et al)

The co location of hydrogen electrolysis with BESS and wind generation is an attractive proposition for storage of excess energy in periods of high wind when there is limited consumer demand. It is certainly preferable to consumer funded constraint payments to windfarm operators not to produce electricity because grid capacity would be overloaded.
However, basic principles of environmental and public safety must be adhered to in the consenting of such projects – not just a focus on meeting net zero targets .

Scottish Wind Farms won't deliver any additional energy because of the oversupply in Scotland and lack of transmission capacity to England and Wales. Building additional wind farms in Scotland is a waste and a division of resources away from what is really needed. Given the urgency to move away from fossil fuels it is imperative to focus effort, resources and consents on project which will make a real contribution to reducing fossil fuel dependency. Projects which increase costs for consumers but do not deliver additional delivered energy are worse than doing nothing at all.

Development proposals for **wind farms in or within sight of National Parks and National Scenic Areas** should not be supported.

It appears that small scale (wind) generation is no longer popular. Everyone wants bigger turbines with longer blades in order to increase the swept area and their profits.

From a Planning regulation perspective the core of this policy is relatively unchanged.

Policy 20 **Zero Waste** Q41

No

It is commendable that SG are recognising the severe problems that will be caused by the disposal of millions of tons of disused wind turbine components. This will be a particular problem for Scotland, rather than the other UK nations. The SG recognises that this will be a massive environmental problem and set up a Zero Waste Scotland (ZWS) organisation to address this.

 Excluding the concrete and steel foundations, up to 85% of turbine components are potentially recyclable (steel, copper etc). The composite fibreglass/expoxy resin blade assembly for one medium size turbine weighs approximately 36 tons. These blades have a working lifespan of up to 20 to 25 years, but cannot currently be recycled, but often require to be replaced after 10 years due to loss of efficiency. 5500 turbines, at least 16,500 blades are expected to be decommissioned in Scotland by 2050. (The Future of Onshore Wind Decommissioning in Scotland-Zero Waste Scotland Report) At present the only large scale disposal solution is landfill for these blades.

A £2million three-year project privately funded pilot initiative at Strathclyde University involves a consortium led by Aker Offshore Wind and Scottish researchers is commendable. Other academic and industry partners include Nottingham University, global waste management firm SUEZ, composite distributor GRP Solutions and composite part manufacturer Cubis Other companies in the Renewable sector should also be supporting such research with the aim of ensuring a more sustainable future for the global wind industry and the wider composites manufacturing industry – accelerating the drive towards net zero emissions and waste and creating new skills and job opportunities in Scotland and the UK.

 Jacobs Ltd were commissioned to look at turbine decommissioning in Scotland for ZWS.
It is a comprehensive assessment and report, looking at the need for future provision and assessing what recycling opportunities are available for Scotland at present and could be developed in the future.

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For example:
Jacobs Report April 2021 for ZWS: Summary and Recommendations:

*"Task 6 Opportunities - in moving to a circular approach to decommissioning:*

*Limited infrastructure and supply chains in Scotland are a limiting factor frustrating*

*much of the industry’s efforts to become more circular. Equally, design for*

*decommissioning is seen as one of the most prominent needs for circular economy gains,*

*but there is limited evidence that this is being addressed."*

There is actually no reprocessing currently available in Scotland, despite the prediction that turbine blades will increasingly be disposed of in their thousands from 2021 to 2050. It is not clear why commercial companies who will have received millions of pounds from consumers and taxpayers over the lifespan of a windfarm should receive yet more funding to recycle waste components. It should not be left to commercial companies to dictate how they would or would not like to deal with their own non-recyclable waste.
If National Grid has adopted the principle of a circular economy and zero waste to landfill, it would be extraordinary if the SG would in contrast sanction thousands of tons of non recyclable turbine blades to be dumped in Scottish landfill ( or sent to other countries to be disposed of their landfill).

It seems extraordinary that SG policy is to at least double onshore turbines over the next twenty years and yet there is no clear provision for recycling.

The cost of disposal and recycling of redundant turbines requires to be included in planning consents. The costs of recycling should be underpinned by legal agreement attached to the windfarm Title and underpinned by insurance policy decommissioning bonds in the same way that decommissioning and land reinstatement for windfarms is ensured through section 75 agreements with local authorities.

Policy 29 **Urban edges** Q47

No

Wind turbine development is not suitable within the Green Belt as it is an industrial development and cannot be compatible within a rural/semi rural environment. It is of a scale, massing, external appearance, and uses materials that will never be able to contribute to harmony with the visual character of the green belt. The constant movement of the blades constantly attracts the eye, makes the structures visible over a greater distance and reduces the tranquillity of the countryside. The green belt is a recreational lung for those living and working in cities and towns and must be protected for reasons of health and well being. If the greenbelt is industrialised, urban residents will be forced to travel further afield for recreation, peace and tranquillity which will result in an increased carbon footprint. Wind turbine development displaces and kills wildlife, rather than restores it except in the case of predators such as foxes who benefit from the carcasses.

Wind farms do not promote local living as residential amenity is decreased and properties are devalued or bought over by developers seeking to increase turbine numbers and thus profit.

**Policy 30: Vacant and Derelict Land** Q48

**Yes**

We generally welcome the re-use of existing housing stock and other existing buildings and bringing empty homes back into use, this is good in terms of reducing carbon emissions and further greenfield expansion
A requirement should be included that a full assessment is made of the contribution existing brownfield sites make to biodiversity.
Local Development Plans should seek to reuse vacant and derelict land where a return to a natural state is not likely

Policy 31 **Rural places** Q49

No

Increasing the number of wind farms will only result in a decline in population growth in rural areas as people leave the area to escape being surrounded by industrial development or are bought out by developers seeking extra land to increase their profits. The distinctive character of any rural area would inevitably be lost to this kind of development on such a large scale. Natural assets and cultural heritage cannot be enhanced; at best they can be safeguarded through the use of appropriate Planning Conditions.

The public expect to have confidence that adverse effects of a consented development can be mitigated with suitable planning conditions that meet Scot. Gov planning circular 4/1998 . This states that planning conditions must meet the following criteria:
• necessary
• relevant to planning
• relevant to the development to be permitted
• enforceable
• precise
• reasonable in all other respects.

If these criteria are not met the applicant can either obtain judicial review, or as is described in that planning circular, apply to have the condition removed or amended under s.42 of the Town and Country Planning Act.

Even if Scottish Ministers impose such planning conditions, its up to local authorities to enforce those conditions - unless the developer applies to have the conditions removed or amended under a new section 42 planning application.
But if local authorities do not enforce those conditions, even if there has not been a s.42 application, then what protection does the public and environment have? None.
There are no mechanisms that the public can invoke, without unaffordable and lengthy Court action which will oblige LA's to carry out their statutory duty and no sanctions that can be applied by the public on either the developer or LA, again without unaffordable legal action.
( and if an example is required, then the Reporter acknowledged and described in her Decision Notice for  the Whitelee Ext 3 appeal ( WIN-190-1), that East Ayrshire Council had not enforced a planning condition for the consented and built Whitelee windfarm Extension 2,  which required the developer to monitor ground water quality on the development site and another condition which required the developer ( for both the original Whitelee windfarm and its extensions)  to communicate private water supply monitoring results to EAC and other LA's.
East Ayrshire Council has now also failed to uphold compliance with supplementary planning conditions 1 and 3 imposed in an appeal Decision Notice for Sneddon Law windfarm Appeal PPA-1990-2054, again in the absence of a s.42 application to change or remove those conditions)

This is a totally unacceptable situation and it must be addressed in NPF4. The public must have confidence that the planning system is fit for purpose, properly regulated and that properly imposed planning conditions meeting the criteria set out in Circular 4/1998 are actually enforced. Otherwise, planning conditions become meaningless and a way of developers obtaining consent for otherwise unacceptable projects which may be contrary to National and Local development plans.

**Policy 32: Natural Places** Q50

No

In part a) the wording needs to be clearer, the term ‘valued’ is ambiguous in this
context. The wording should be changed to say that all European, Ramsar and SSSI sites must be identified and protected. All public bodies have a legal duty to further the conservation of biodiversity and this must be reflected in this policy

We welcome reference to nature networks but it is not clear how these will be delivered and there is a need for a national nature network across a Scotland

 Part c) doesn’t give any policy position but just refers to regulations. The policy needs to clearly set out that development should not damage European sites and there is a very strong presumption against this. If this is not done developers might think its ok to damage our most protected wildlife areas

If the loss of biodiversity is to be halted and reversed the focus cannot simply be on already protected sites. Non-statutory sites, such as local nature reserves, and species and habitats everywhere are also really important

 Policy 32 needs to really emphasis that harm to nature should be avoided whenever possible, if it can’t be avoided then impacts mitigated. If there is still some harm caused then this must be compensated for, for instance planting trees to replace those removed or damaged.

Paragraph 180 of the National Planning Policy Framework for England has useful wording and states:

“When determining planning applications, local planning authorities should apply the following principles: a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused.

Wind farms do not have to be inside the boundaries of a Wild Land Area to affect the experience of wildness because wind farms nearby are still highly visible. There are some Wild Land Areas, such as WLA 39 (East Halladale Flows, Caithness) and WLA 1 (Merrick, in Galloway) that are close to being surrounded by wind farms that have been built, consented or proposed. Additionally, Scottish Ministers gave permission for the Creag Riabhach wind farm which had turbines within a Wild Land Area (WLA 37 Foinaven–Ben Hee, in Sutherland).

The recent and current planning policy provisions at national and local level have not prevented the continuing attrition of wild land, whilst wind farm applications continue to be random, speculative proposals which are followed by often inconsistent decision-making. There is an absence of positive and consistent planning oversight.

The statement from the previous framework "We also want to continue our strong protection for our wildest landscapes – wild land is a nationally important asset" must be carried over to the new NPF4 with the addition of the phrase "There should be a presumption against development in Wild Land Areas".

**Policy 33: Soils Q51**

**No**

The practice of the renewable industry appears to be that pristine peat is characterised as degraded, even when there has been no previous human intervention or development. It then suggests that peat will be improved after the windfarm construction impacts of excavation by stating for example, that existing drainage channels will be blocked.

The natural history of peat is that ‘peat pipes’ exist naturally within pristine peat, often at peat/till interfaces and that these naturally occurring channels often provide reliable private water supplies for rural inhabitants. Once the peat is disturbed its water retention properties may be lost, natural drainage channels are lost and dependent private water supplies may be lost.

Good peat management during windfarm construction may somewhat mitigate the damage, but it is an oxymoron to suggest that a windfarm can be constructed on deep peat without causing significant damage. Even ‘floating roads’ built on deep peat to avoid excavation will sink and compress and kill the underlying peat and disturb normal water channels in peat. Turbine foundations and crane pads must be built on solid foundations – peat therefore has to be excavated for these structures, even if turbine foundations are piledriven.

Thus mitigation measures outlined in the ‘Good practice during Windfarm construction 4 edition’, written in 2019 by the Renewable industry , SEPA, SNH and others is effectively attempting to mitigate the damage that will occur if windfarms are consented on peat. To protect this precious, slow growing carbon sink, the SG should enforce its policy of only building windfarms in the right place and avoid building windfarms, access roads, hydrogen plants, BESS and their infrastructure on peat.

The need for avoiding consent altogether for windfarms where the site contains deep peat. Environmental consultants employed by windfarm developers will produce environmental statements that are frequently over optimistic in minimising peat depths. ‘Micrositing’ of routinely 50metres and sometimes more, will allow a developer to legally move a turbine foundation onto deeper peat if it is expedient and in their interests.

The measures set out in the Good practice guide should be enforceable, with penalties for poor practice evidenced by independent planning monitoring officers (PMO’s). This will ensure that construction standards are improved and maintained.

. Turbine foundations and crane pads must be built on solid foundations – peat therefore has to be excavated for these structures, even if turbine foundations are piledriven.

**Policy 34: Trees, woodland and forestry Q52**

SG has a policy of onshore development in publicly owned forests. Scotland’s publicly forested areas (Land and Forestry Scotland – FLS) have been divided up into 5 areas allocated to specific developers e.g. Lot 1 South West Scotland has been allocated to SPR.

Since 2000, almost 14 million trees have been felled to facilitate windfarm construction. Statistics from Land and Forestry Scotland. (Herald 29/02/2020) Three million were felled for Whitelee windfarm stage one alone.

These figures exclude trees felled on privately owned land for windfarms.
It is mature trees that provide the greatest carbon store and protection from excess run off and flooding. The renewable industry point to compensatory replanting, but it takes more than 40 years for some trees to reach maturity. It is a sad indictment that deforestation is a consequence of the onshore wind industry.

FLS response to the felling of trees for windfarms is that this is only about 1% of Scotland’s forested area has been felled specifically for windfarms and most of the felling was of commercially planted trees, even if these were immature. This seems to be a response which does not acknowledge the problem of otherwise unnecessary deforestation and the loss of carbon capture..

There is an assumption that taller turbines (150 - 250m to tip height) will necessarily have blades which clear the heights of mature conifer trees (@ 50- 60m)

If wind hitting the bottom of the rotor is slower than wind at the top of the rotor blade it produces wind shear effects reducing the efficiency and longevity of the turbine. Growing and mature trees over a certain height in the windfarm have to be cut to remove those windshear effects.

Keyholing is often used during construction when turbines have not been commissioned, or later, when trees are small and immature and will not produce wind shear anyway..
A modern 200m turbine, e.g. Vestas 6MW turbine, has a tower of 125m, blade diameter of 150m and ground clearance will therefore be 50m.

SPR’s Arecleoch Extension recently consented (2021) by Scottish Ministers, is a good example of how keyholing into ‘mature’ forestry, implied in this document can be misleading.
Arecleoch windfarm Extension is sited on publicly owned Forestry and Land Scotland assets. Turbine rental will be paid to the Scottish Government via Land and Forestry Scotland.

The developer has said in the ES,
*“Fewer but taller turbines also reduces the felling required by increasing the rotor clearance above the tree canopy which reduces the impacts upon existing forestry operations”* ( ES 2.2 para 16 )

The reality is that the existing baseline FCS felling plan was brought forward and changed to ensure clear felling, not keyholing, in the construction phase and area of the windfarm site. The ES states, advance clear felling of immature trees therefore extends to 135 Hectares, with overall loss of 60 HA forestry, even after replanting. *There will be replanting of shorter, slow growing broadleaf species, unlikely to exceed 30m maturity around turbines keyholed into these replanted areas. This effectively removes the need for felling around turbines for the lifespan of the turbines.*

Is this what the SG understands by keyholing turbines into mature forests and avoiding the need for clear felling?

The developer is committed to compensatory planting somewhere, but these facts are not published. (Arecleoch ES Appendix 3.2 Forestry technical report)

Other windfarms have approved policies to cut replanted trees when they are immature at 10m height, again to avoid wind shear on turbines. (Whitelee windfarm Extension ES)

Mature trees and deciduous trees provide the greatest benefit in terms of carbon capture. If turbines are consented in forested areas, there should be conditions which require that forestry is not removed early, apart from keyholing to a specified diameter around a turbine and that there should be designated and publicly identified compensatory planting elsewhere.

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