From: [redacted]
To: NDF
Subject: Re: Response to NDF
Date: 19 November 2019 16:07:10
Attachments: Azra Dale response to NDF_15Nov2019.pdf
ATT00001.txt

Dear Russell,

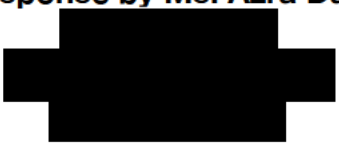
Thank you for your email.

It appears that I attached the Pages version of my response to the NDF, rather than the PDF version which I had created for the purpose of sending to you.

I do apologise for my error, and attach the PDF version which I had intended to send to you. If for some reason you have any problems opening the attached document, please let me know.

Kind regards,
Azra

Welsh Government National Development Framework (NDF)
response by Ms. Azra Dale



Before I get into the details of my response, I would like to ask whether or not there is a cost assessment for the implementation of all of the policies outlined in the draft NDF? I looked, but could not find one. This gives me cause for great concern and begs the question, who is going to pay for all of this?

At first glance, it appears to me by the tone and content of the NDF that the collaboration with corporate stakeholders surpasses by far any possible form of collaboration which may have been engaged in with the residents of the various towns, city and rural communities in Wales. In fact, I do not know a single soul in my rural area whose opinion was asked during the initial stages which resulted in the draft NDF. In my opinion the draft NDF focuses upon development which favours corporate developers with vested interests rather than the needs, wants and desires of we the people who live here, particularly in rural Wales. In my opinion thhe result of this exercise confirms to me, and others how out of touch the Welsh Goverenment in Cardiff is with the rest of Wales.

The NDF is based upon the premise that we are amidst a “climate emergency”. in this regard, **Outcome 11** states:

> **The challenges of climate change demand urgent action on carbon emissions and the planning system must help lead the way in promoting and delivering a competitive, sustainable decarbonised society.** Decarbonisation and renewable energy commitments and targets will be treated as opportunities to build a more resilient and equitable low-carbon economy, development clean and efficient transport infrastructure, improve public health and generate skilled jobs in new sectors.

With the NDF targets and policies aimed at the alleged urgent need to reduce carbon emissions, I am compelled to note that carbon is not a synonym for carbon dioxide. However, the term appears to be constantly used in this incorrect manner.

As you well know, carbon is a solid whilst carbon dioxide is an odourless gas. In my opinion and others, the use of the term carbon was purposefully chosen to be used as a false synonym for CO2 because “carbon” conjures up dark visions of soot, lamp black and coal dust which is not at all warm and fuzzy and feeds into the “climate emergency” frenzy. The irony of this is that the pursuit of the unrealistic goal of 70% of “energy” being derived from unreliable industrial wind and solar plants, will put us back into the dark ages, with similar living conditions, if it’s allowed to proceed. I have expanded upon this with evidence at the end of my reponse.

CO2 Emissions

The statement that there will be "consequent savings in terms of carbon emissions which materially outweigh such environmental effects” is not supported by research and in practice. In fact quite to the contrary. Industrial wind turbines such as those proposed for the many target Priority Areas are unreliable, intermittent and inefficient. They cannot be

relied upon when needed and the unreliable intermittent energy which they produce create problems with the National Grid.

As chartered engineer Steve Proud of Swansea, who worked in the electricity suppy industry for 39 years, wrote in a letter to the editor of The Telegraph published 5 October 2019:

> Renewable generation – solar, wind and tidal – is, by definition, non-synchronous and it is technically impossible to operate our electricity transmission system solely on non-synchronous generation. There is a real danger of system instability and consequential widespread blackouts once non-synchronous generation exceeds around 30 per cent of total generation at any one time.
>
> The National Grid report on the recent major outage makes numerous references to the lack of inertia in the system. This resulted from insufficient large synchronous generators (nuclear, coal, gas) being connected.
>
> Given the need to reduce carbon dioxide emissions, the only option is to increase significantly nuclear build rapidly. Both Labour and Conservative governments have been unwilling to commit themselves to this, which has led us into the problems we now face.
> It is unfortunate that politicians and environmental campaigners are ignorant of the technicalities of energy supply, or wish to ignore them. MPs may have the power to change the laws of the land, but not to change the laws of physics.

There is a consensus amongst those who do not have vested interests in the renewable industry that the 9th August blackout occurred as a result of problems caused as a result of:

> **1**. Low system inertia is a growing concern in the UK, and there is some ground for thinking that it was at least a contributory factor to the severity of the blackout on the 9th of August. The constraint payments to Hornsea Offshore wind, along with those to CCGT to increase output, are consistent with this hypothesis, and deserve investigation by government and the regulator.
> **2.** We note, that there may also be location specific problems with the network in this area, making the frequency protection systems liable to false positives in the event of a fault such as a lightning strike.
> **3.** In any case, the high and varying prices charged by Hornsea Offshore Wind to reduce output are suggestive of an abuse of market power, and appears to be a contravention of the Transmission Constraint Licence Condition. Ofgem should investigate to determine whether this interpretation is correct, and if it is should intervene to prevent this behaviour and ensure it does not spread into the wider market. (Source)

Constraint payments paid to wind turbine operators to not operate is a highly contentious issue since we end up paying for these lucrative payments via tariffs tacked onto our ever increasing electricity bills. This situation will be compounded by the NDF's proposals for vast areas of Wales to be developed for industrial scale wind and solar plants, and will likely result in even more people suffering from energy and fuel poverty. The figures published in May 2019 by the Welsh Government estimates that '155,000 households, or the equivalent of 12% of all households in Wales, were living in fuel poverty' in 2018. (Source) These figures will be greatly increased if the NDF is permitted to proceed based

upon its present form. Putting more people, households and businesses into fuel poverty is completely contrary to the provisions of the Well-being of Future Generations (Wales) Act, 2015.

Policy 6 – Planning in Mobile Action Zones

Although I have been unable to find a specific reference in the voluminous draft consultation documents, I did note at page 5 of the Young People's summary of the NDF that the goal to provide a greater digital infrastructure with increased mobile coverage via new equipment and infrastructure is likely to involve untested 5G technology.

Scientific American, the oldest continuously published monthly magazine in the U.S. recently featured the article, We Have No Reason to Believe 5G Is Safe which issues a stern warning about the known and potential dangers of 5G technology. 5G uses millimetre wave technology which was originally developed by the military, and has been used for crowd control.

In the article, University of California, Berkeley public health researcher Joel M. Moskowitz argues that 5G, along with previous wi-fi and cellular technology, is much more harmful than the government and telecomm industry wants the public to believe.

> The latest cellular technology, 5G, will employ millimeter waves for the first time in addition to microwaves that have been in use for older cellular technologies, 2G through 4G. Given limited reach, 5G will require cell antennas every 100 to 200 meters, exposing many people to millimeter wave radiation. 5G also employs new technologies (e.g., active antennas capable of beam-forming; phased arrays; massive multiple inputs and outputs, known as massive MIMO) which pose unique challenges for measuring exposures.
>
> Millimeter waves are mostly absorbed within a few millimeters of human skin and in the surface layers of the cornea. Short-term exposure can have adverse physiological effects in the peripheral nervous system, the immune system and the cardiovascular system. The research suggests that long-term exposure may pose health risks to the skin (e.g., melanoma), the eyes (e.g., ocular melanoma) and the testes (e.g., sterility).

Since 5G is a new technology, there is no research on health effects, so we are "flying blind" to quote a U.S. senator, says Moskowitz. He also cites the the International EMF Scientist Appeal, which elaborates on the now-known dangerous effects of RFR:

> "Numerous recent scientific publications have shown that EMF affects living organisms at levels well below most international and national guidelines. Effects include increased cancer risk, cellular stress, increase in harmful free radicals, genetic damages, structural and functional changes of the reproductive system, learning and memory deficits, neurological disorders, and negative impacts on general well-being in humans. Damage goes well beyond the human race, as there is growing evidence of harmful effects to both plant and animal life." [Source]

A recent paper, On the Clear Evidence of the Risks to Children from Non-Ionizing Radio Frequency Radiation: The Case of Digital Technologies in the Home, Classroom and Society by Professor Tom Butler, a social scientist at the University College, Cork, highlights the most recent published research and delves into past historic papers on RF/

EMF radiation. This paper poses serious questions for the future, especially the future of our children's health and well-being which is under significant threat. This is especially so given that children are not receiving proper precautionary guidance for the use of mobile phones, smartphones, tablets and now the internet of things, including the proliferation of microwave non-ionising radiation frequency communication systems that are needed to service and connect these devices such as wifi, smart meters, 2G, 3G, 4G and now the threat of 5G masts on every street.

I am not alone in feeling very strongly that it is not at all appropriate, and may well be negligent, unlawful, to impose the installation of 5G technology and infrastructure throughout Wales, and the UK, until thorough health and environmental impact studies have been conducted in relation to humans, animals, birds, bats, insects, flora and fauna. To do otherwise puts public health and the environment at risk.

Given the known health risks, coupled with potential unknown risks, the implementation of untested 5G technology would be completely contrary to the stated ambition of Wales as a "healthier and fairer place", and the Welsh Government's Well-being of Future Generations (Wales) Act 2015.

Policy 6 – Ultra Low Emission Vehicles

The proposed roll-out of electric vehicle charging stations with a view to the idea of having most people driving electric vehicles by 2030 is, in my opinion and others living in rural Wales, divorced from reality.

It is crucial to note that huge damage to people and place arises from the world's lust for electronics which require the use of rare earth minerals, mined primarily in China. Here is an excerpt from the The Guardian article: **Rare-earth mining in China comes at a heavy cost for local villages – Pollution is poisoning the farms and villages of the region that processes the precious minerals**:

> The town of Baotou, in Inner Mongolia, is the largest Chinese source of these strategic elements, essential to advanced technology, from smartphones to GPS receivers, but also to wind farms and, above all, electric cars. The minerals are mined at Bayan Obo, 120km farther north, then brought to Baotou for processing.
>
> The concentration of rare earths in the ore is very low, so they must be separated and purified, using hydro-metallurgical techniques and acid baths. China accounts for 97% of global output of these precious substances, with two-thirds produced in Baotou.
>
> The foul waters of the tailings pond contain all sorts of toxic chemicals, but also radioactive elements such as thorium which, if ingested, cause cancers of the pancreas and lungs, and leukaemia. "Before the factories were built, there were just fields here as far as the eye can see. In the place of this radioactive sludge, there were watermelons, aubergines and tomatoes," says Li Guirong with a sigh.

In my opinion, it is unconscionable that because this incredible toxic damage to the people and environments, and loss of life occurs in China, that it is not taken into account in unrealistic "green" policies, like the NDF.

Please also see the following excerpts from the article, Why Electric Vehicles are Not Renewable, Clean or Green:

> The emerging science of geomicrobiology, along with revelations about the true environmental cost of electric batteries, are changing scientific opinion. Such fresh insights are overturning conventional ideas of what 'clean and renewable' really means for mass energy generation.
> […]
> **Dirty Secrets: Electric Vehicle Batteries**
>
> But the greens have till now kept hidden two dirty little secrets. First, it is a lie that electric vehicles (EV's) emit less CO2 than comparable petrol-driven variants. Last week, we revealed that EV's emit DOUBLE the CO2. Using government data we showed that for the UK to switch from petrol cars to EV's would require the nation to build 160 new Drax-type coal power stations.
>
> Secondly, ardent greens don't want you to know just how toxic and non-renewable are the rare earth metals and other raw materials used in the manufacture and maintenance of EV batteries (inc. neodymium, lithium, and cerium). Required in huge quantities, these materials are neither renewable, or clean. They are extremely poisonous.
>
> On the other hand, hydrocarbons are fairly benign by comparison. Hydrocarbons are readily digested by microbes and used by humans for everything from laxative to cosmetics. But in our prevailing and perverse double-speak eco-world you could be forgiven for thinking lipstick (containing petroleum) and CO2 (exhaled breath/plant food) are poisons.

No amount of warm fuzzy colourful videos and scripted speeches will ever convince me that the popular movement promoted by people, most of whom have never taken the time to look into the background of the toxic materials and processes that are required to manufacture electric vehicles and their huge toxic unrecyclable batteries, is a good idea. It's obvious with a bit of research that rather than allegedly saving the planet, the proliferation of electric vehicles requiring frequent boosts of vast amounts of electricity to keep them going, will only further the destruction of our earth.

A frequent argument against this position is that more advanced long lasting battery technology is right around the corner. When you do the research, there is no concrete valid evidence for this. Just a lot of empty promises.

Policy 9 – National Forest

> The Welsh Government is committed to developing a national forest, and will identify appropriate delivery sites and mechanisms to achieve this aim. Action to safeguard proposed locations for the national forest will be supported.

Further details of Policy 9 state:

> An increase in woodland cover is need to build the resilience of our ecosystems, to secure the delivery of our climate change and decarbonisation aspirations, and to ensure that the productive potential of Welsh woodlands is maintained.

I very much support the desire and need to plant more trees to increase woodland cover in Wales. Trees and plants require and thrive on CO2, which through the process of photosynthesis, produce the oxygen that we require to breath and survive.

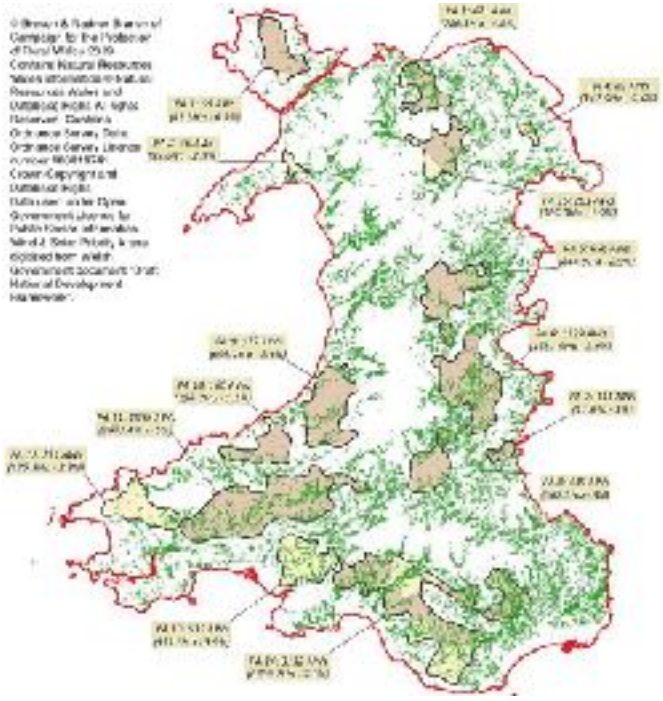
I am aghast when I hear representatives of the Welsh Government and NRW promoting the use of the Welsh government's public estates, particularly its Woodland Estate, as an area in which the criteria of Policy 11, that there should be "no unacceptable adverse effects" should be dispensed with, such that the public estates could be opened up to large scale wind and solar development.

I am certain that such changes would have dire consequences but would please the hungry developers to no end. This is particularly so since according to a recent industry report, Rhys Jones, head of RenewableUK Cymru has stated:

> "We think a criteria-based approach that continues the policy intent around presumption in favour but is applied outside the red areas that have fixed constraints – such as National Parks, Areas of Outstanding Natural Beauty and other special designations – would be better for 10MW-plus projects."

I certainly hope that the views of the residents of Wales will hold more weight than those who only see our beautiful wild landscapes, and all the ancient history and relics which they hold, as commodities to be raped and pillaged for financial gain.

Included in our precious landscapes are of course the Ancient Woodlands which I could not see specifically referenced amongst the material. This map prepared by CPRW Brecon & Radnor Branch which overlays the locations of the Ancient Woodlands in Wales upon the NDF Priority Areas, vividly illustrates how there is a huge conflict inherent in this policy. This is particularly so given that large scale wind and solar developments which the NDF promotes, will neccessitate the felling of many trees.



Contrary to the official “climate emergency” narrative, there has in fact been a dearth of CO2, and with the incremental increase in CO2 levels over the past 100yrs or so, the earth is finally greening again, with the bread baskets of 1000s of years ago like the Sahel region of Africa, coming back online again. As Patrick Moore, one of the co-founders of Greenpeace says, “we were literally running out of carbon before we started to pump it back into the atmosphere. CO2 has been declining to where it is getting close to the end of plant life.” (Source)

This stance on the dearth of CO2 is supported by many scientists, including renowned physicist, Prof. William Happer of Princeton University. In this video Prof. Happer discusses the multiple facets which affect the climate, and “points to the logarithmic dependence of temperature on carbon dioxide levels.”

It is well known that CO2 lags temperature, by several hundred years. This scientific fact is the exact opposite of the premise of “global warming” and the climate emergency upon which the NDF is predicated, since by all appearances it is currently politically expedient to do so. It is notable that Al Gore’s “global warming” terminology was reframed in the last decade as “climate change”.

The climate has, and will always change. CO2 is the gas of life and without it, all life on earth would (will) perish. As such, the pursuit of policy that may potentially involve the felling of more trees, is completely contrary to the goals which form the basis for the ideology upon whch the NDF is based. This brings me to the renewable energy policies which I will comment upon next.

Renewable Energy Policies 10 – 13

Firstly, I must briefly comment upon the desk-top exercise used by Arup to create the maps and Priority Areas (PAs) which underly the NDF’s proposed renewable policies. Arup map 2 in particular is absolutely ridiculous in that towns have been shifted into other areas (eg. Aberaeron is named where Llanelli is located; Rhayader becomes the place name for Llanidloes etc.), whilst others such as Tenby, Chepstow and Monmouth are missing completely, do not exist, according to Arup. Arup also makes a complete muddle of visual impact buffers for National Parks and Areas of Outstanding Natural Beauty. There is also one area identified for solar only which appears to be part of the Welsh Government’s Woodland Estate. The fact that the Welsh Goverment has published its NDF using the mess of the Arup’s maps as a basis for it’s renewable energy policies, which would essentially industrialise vast tracts of rural Wales in and of itself, makes the NDF not fit for purpose.

As you are probably aware, CPRW’s National Executive Committee which sent this week, an urgent letter to all Welsh Government ministers. CPRW "have concluded that the all-important Renewable Energy assessment within the NDF is so misconceived and error-laiden that it is unfit for purpose, should be removed from the NDF, and should be re-written prior to a re-consultation.”

I concur with this statement for a variety of reasons. Most important is the fact that **Wind turbines are neither clean nor green and they provide zero global energy** :

> From the International Energy Agency’s 2016 Key Renewables Trends, we can see that wind provided 0.46 per cent of global energy consumption in 2014, and solar

> and tide combined provided 0.35 per cent. Remember this is total energy, not just electricity, which is less than a fifth of all final energy, the rest being the solid, gaseous, and liquid fuels that do the heavy lifting for heat, transport and industry.
>
> The problem is the wind resource itself, and we cannot change that. It's a fluctuating stream of low–density energy. Mankind stopped using it for mission-critical transport and mechanical power long ago, for sound reasons. It's just not very good.
>
> As for resource consumption and environmental impacts, the direct effects of wind turbines — killing birds and bats, sinking concrete foundations deep into wild lands — is bad enough. But out of sight and out of mind is the dirty pollution generated in Inner Mongolia by the mining of rare-earth metals for the magnets in the turbines. This generates toxic and radioactive waste on an epic scale, which is why the phrase 'clean energy' is such a sick joke and ministers should be ashamed every time it passes their lips.
>
> It gets worse. Wind turbines, apart from the fibreglass blades, are made mostly of steel, with concrete bases. They need about 200 times as much material per unit of capacity as a modern combined cycle gas turbine. Steel is made with coal, not just to provide the heat for smelting ore, but to supply the carbon in the alloy. Cement is also often made using coal. The machinery of 'clean' renewables is the output of the fossil fuel economy, and largely the coal economy.
>
> A two-megawatt wind turbine weighs about 250 tonnes, including the tower, nacelle, rotor and blades. Globally, it takes about half a tonne of coal to make a tonne of steel. Add another 25 tonnes of coal for making the cement and you're talking 150 tonnes of coal per turbine.
>
> The point of running through these numbers is to demonstrate that it is utterly futile, on *a priori* grounds, even to think that wind power can make any significant contribution to world energy supply, let alone to emissions reductions, without ruining the planet. As the late David MacKay pointed out years back, the arithmetic is against such unreliable renewables. (Spectator article 13 May 2017)

The foregoing comments are supported by these in-depth research papers:

The hidden fuel costs of wind generated electricity

The embodied carbon dioxide within a windfarm

An important aspect of the push for renewable energy which is rarely mentioned or discussed if at all by political organisations and developers, is that both wind and solar plants require back-up diesel generators and/or battery storage. As I mentioned with regard to electric vehicles, despite bluster to the contrary, the technology for reliable long-term battery storage has yet to be developed.

> Large-scale storage of electricity is the latest proposed solution to boost the deployment of renewables. Renewable energy advocates, businesses, and state governments plan to use batteries to store electricity to solve the problem of intermittent wind and solar output. But large-scale storage is only an insignificant

> part of the electrical power industry and doomed to remain so for decades to come. (Source)

Peat and CO2

Many of the NDF's potential sites for both wind and solar are areas of peat which serve as natural carbon captures, as trees do.

In the Cambrian News article Consternation as windfarm site is found to be emitting carbon dioxide regarding Cefn Croes wind farm, a statement by the Environment Agency about the £50m scheme which caused serious environmental damage is quoted as follows:

> There is considerable concern about the huge amount of drying peat around some of the turbines, with oxidation of exposed peat leading to a huge loss of carbon to the atmosphere … The agency finds it hard to believe that the original environmental impact assessments did not raise concerns about the dire consequences of draining the raised bog.

"Layer upon layer of dead organic matter accumulates faster than it can be broken down, and over time it is compressed and pickled to form peat. The depths of these peat deposits vary across Scotland [and Wales] depending upon local conditions but on some bogs it can be as much as ten metres! That's a staggering depth when you consider that peat accumulates at the agonisingly slow rate of around 1mm per year. Put simply, the volumes of peat we're 'consuming' cannot be replaced in our lifetimes because even a metre's worth could take 1000 years to replace." (Source article *Why we should care about peat* @ Walkhighlands April 14, 2017)

Ecology | Water/Hydrology

Not only does the production of the materials used to make the components of wind turbines require coal, gas and other sources of electricity, the chemical cocktail included in the 1000s of tonnes of concrete required for the base of each turbine with many petrol powered lorry loads delivering it, the excavation itself will damage the water table and streams which run like ribbons through most identified PAs in Wales, and feed into our majory rivers. Here is an example of the excavation required for the base of a relatively small 100m turbine.

Decommissioning of Wind Turbines

One aspect of the NDF's Renewable Energy policy which I do applaud is the enforcement of decommissioning protocol, including the requirement of having funds set aside for this every costly, yet necessary task. This is something that has been sadly lacking with other wind and solar plants, as reported by communities in Wales, the U.S. and elsewhere around the world.

The complete lack of community engagement by Hendy Wind Farm Limited, along with it's failure to set aside the required funds to be held in escrow, to cover the costs of decommissioning, is just one example of why many people are against the proliferation of wind and solar industrial plants in their areas. This is especially so when the experiences of people on the ground is that any econominic benefits from these developments has been seen to go to people and corporations outside of our communities, and Wales.

I support renewable energy technology provided that it is placed in appropriate locations with minimal impact upon people and place. This will be increasingly difficult to achieve given that there is a move to larger wind turbines of up to 250m in height. This would neccessarily require the development, and thus desecration and destruction of vast tracts of our precious landscape which in my opinion, should be protected and preserved for future generations.

In terms of impact upon the landscape, the nature of the excavation required to construct the foundation for turbines along with the required materials used, which includes many tonnes of chemically laced concrete and reinforced steel rods, creates a huge footprint which, in my opinion would have a significant and irreversible detrimental impact upon the landscape. This, in my opinion would also necessarily have a far reaching permanent impact upon all aspects of renewable energy sites identified in the PAs including the historical and cultural heritage, hydrology, ecology and geology of the area.
With regard to the decommissioning process I would like to reference the following excerpts from the research paper, *Wind Turbine End-of-Life: Characterisation of Waste Material* prepared by Iklas Andersen, his thesis for the Master programme in Energy Engineering at the University of Gävle in Sweden 2015:

> 5. INVENTORY OF MATERIAL USED
>
> A single wind power plant can weigh up to several hundred tonnes and the material used varies with capacity, design, manufacturer and location. [Practically all the plants installed in Sweden uses a three -bladed design[10] with a few variations of generator types, and more than 97% is located onshore.]
>
> FOUNDATION
>
> Unless the ground on the location is solid rock, in which case the tower may be anchored straight to the ground, a foundation stable enough to withstand the strong momentum caused by forces from wind and rotation of the blades is needed. At onshore locations a gravity foundation is most commonly used in the form of a large concrete disk buried in the soil with a steel construction in the centre for anchoring the tower [19]. As the intrinsic purpose of this construction is to use gravitational forces to compete with the momentum from the turbine it is always the heaviest part, between 60-90 % of total weight in onshore turbines.

> The material used is ranging between 3-6 % [2] steel and the rest is concrete. The material found here is excluded in estimations (see explanation in chapter 1.6).
>
> Chapter 1.6
>
> The weight and design of the tower foundation is dependent on the surrounding environment, and no such information is available in the data used in this research, nor has it been found elsewhere. Attempts to estimate the foundation weight based on other parameters has proven inaccurate. It is also unclear how much of it, if any, that has to be removed from the site after decommissioning since it is often largely hidden underground. Therefore the foundation weight and material included within it has been completely excluded from the estimation results.
>
> Chapter 10
>
> The issue with rare earth metals in new models using permanent magnets, which are hazardous to produce and complicated to recycle according to the mentioned KTH research [24] has not been addressed in this study since the technology is relatively new and the future development hard to predict. [*comment: These rare earth metals used to manufacture the magnets are a finite resource that are mined in China.*] A proper investigation into the waste amounts of these materials is recommended to make sure it can be properly handled. Another major material that has been completely left out of the study is concrete, which is found in very large amounts in the turbine foundation. Either a method to calculate the foundation weights based on location or an empirical study is needed to estimate the concrete amounts, as well as research on how often the material is simply left on location instead of removed.
> Source: https://www.diva-portal.org/smash/get/diva2:873368/FULLTEXT01.pdf

If installed, when wind turbines are decommissioned, which could be after anywhere between 12 and 25 years of operation, according to studies of the lifespan of wind turbines, it is my understanding from a brief review of the very limited literature available on the subject, that the foundations are usually never removed. If the turbine foundations are left in situ then the primary constituents of the construction material would of course also be left. This would mean that the concrete and reinforced steel rods, with their toxic components would continue to leach into the soil, ground water, streams and rivers for possibly millennia, as they breakdown.

Impact of wind and solar development upon birds, bats, insects, endangered species and habitats

The preservation of endangered species, birds, bats and insects must also be considered within far-reaching plans for covering rural Wales with large-scale industrial wind and solar plants.

In his article for the Radnorshire Wildlife Trust Summer 2017 Newsletter, **Llandegley Rhos Under Threat**, Pete Jennings, the Radnorshire Bird Record writes about one small precious area of rural Wales that has already been descecrated because Lesley Griffiths overroad public opinion and the recommendations of the Welsh Planning Inspector, by giving permission to Hendy Wind Farm to proceed in one of the most inappropriate locations, surrounded by ancient monuments and iconic Llandegley Rocks. What has

occured at Llandegely Rhos is representative of what our precious rural landscapes hold and should be preserved. Given that the Priority Areas will necessarily conflict with known migration routes of birds, I will use the information I have gathered about Llandegley Rhos to illustrate what is at stake, and the potential losses that are highly likely to occur.

> **Llandegley Rhos Under Threat by Pete Jennings** excerpt:
>
> Llandegley Rhos is an area dominated by rough grassland, wet pasture and gorse covering about two square kilometres to the south of Llandegley with Llandegley Rocks overlooking from the north end and Llanwefr Pool marking the southern extremity.
>
> My first ever visit to Radnorshire was in early 1978… I had come to Llandegley Rhos in search of the famous Cinereous (Black) Vulture of unknown origin which had been in the area for a couple of months. It was like somewhere in the foothills of the Atlas Mountains or the Urals rather than east Wales and made a deep impression on me.
>
> In another life I found myself driving daily to work along the A44 from the east over the hill with the Rhos and the iconic Llandegley Rocks ahead. It is the first wild place of Wales one sees: the vast openness of the Rhos and the jagged, volcanic intrusion of the Rocks like a long dinosaur's spine stretching north to south. The view changed with the seasons and the shadows of morning and evening but otherwise it was always the same, magnificent view, often with the greater hills of the Cambrian Mountains visible to the West.
>
> Over the past 30 years or so I have visited the area hundreds of times for general birdwatching and counting the winter Starling roost from a vantage point. At dusk the huge swirling mass of about 150,000 birds in recent years gathers from at least 25 km all around. I have traced them coming in from as far away as Shobdon in Herefordshire! With the backdrop of Llandegley Rocks it is one of the greatest Starling roosts, unless you prefer Aberystwyth pier or vast reed beds. Attending at the roost are usually several species of bird of prey including Hen Harrier, Merlin, Peregrine and Short-eared Owl as well as Goshawk, Sparrowhawk and Kestrel. The Rhos should have been designated a SSSI years ago but sadly it has been overgrazed and burnt for a long time now and isn't what it used to be although it still has a good breeding bird community including Curlew, Stonechat, Whinchat, Linnet, Snipe etc. Llandwefr Pool and its surrounds have Grasshopper and Sedge Warbler most years, still some breeding Black-headed Gull and various visiting wildfowl including a par of Garganey one April. <u>The whole area is on a major migration route with birds seasonally flying north and south up and down the Edw valley from/to the Wye valley and all points beyond</u>. (Underlining mine)

Starlings and their Roosts in stands of woods, ancient and otherwise

The RSPB and the British Ornithological Trust both note an almost 80 percent decline in the Starling population since 1987. The Starlings' winter roost at Llandegley is a well-known and much loved location for observing, photographing and filming magnificent murmurations of starlings which draws visitors to the area from many locales, near and far. The last estimates that I've heard about the number of starlings in the Llandegley Rhos Roost was approximately 500,000.

From late summer, migrant Starlings from as far as Scandinavia, the Baltic States, the Low Countries, Germany, Poland and Russia join our residents. By mid-winter the population can be huge with up to half a million roosting in some places. The map shows the movement of Starlings from a broad geographical area into Britain and Ireland.

Starling

The map above of illustrates Starling migration routes from the British Ornithological Trust's website which will obviously be intervered with by the imposition of massive wind turbines within the PAs the NDF has identified as developers stand by waiting to take advantage.

The recognised Starling roosts in Wales where local people and tourists gather to watch their mesmerising murmurations include Llandegley Rhos, Aberystwyth Royal Pier, Llanfaes Bridge Brecon, Trelech Carmarthen, Ceredigion Teifi Marshes, RSPB Cors Ddyga on Anglesey, RSPB Conwy and others.

Curlews

"A study carried out by the RSPB in 2012 found that wind farms are not "bird blenders" but the construction did damage the population of Curlews. The study also reported that "Curlew numbers remained "significantly lower" after the wind farms began operating, as they abandoned nesting sites." (Telegraph).

The global population of Curlews was listed as "Near Threatened" in 2008 by IUCN due to declining numbers. (Source)

The RSPB currently Red lists the Curlew. BTO's 2017 article, **The decline of the Curlew** states:

> The results of the study suggest that a number of environmental changes are going in the wrong direction for breeding curlew. Degradation of habitat is a key driver of Curlew decline, which breed at highest densities in areas of semi-natural grassland and moorland. The afforestation of such upland areas has had a pronounced negative impact on their abundance and trend. They also have small and declining populations in areas of extensive arable farming.

There is further information in the BTO article from March 2017 that, Over--half of the world's curlew and godwit species face extinction from habitat loss and other pressures.

Please note that the RSPB also lists Whinchat, Linnet and Grasshopper Warbler as Red Status whereas Snipe and Black-headed Gull are Amber Status. All of these birds are mentioned by Pete Jennings and use Llandegley Rhos for breeding, foraging and living.

Bats

An article from The Guardian published November 7, 2016 states:

> Hundreds of bats are being killed in collisions with wind turbines in the UK each month, despite ecological impact assessments predicting that many windfarms were unlikely to affect such animals, according to a new study.

> All UK species of bats are protected by law, and ecological impact assessments - carried out before construction of windfarms or other sites - should weigh up the risks for local habitats and wildlife. But new research suggests that such assessments are simply not up to scratch. (Guardian)

According to the study conducted by researchers at the University of Exeter, wind farms are probably killing tens of thousands of bats a year, even where risk assessments have been carried out to prevent the deaths. "*The scientists think that bats may turn off their sonar when high up because they don't expect anything to be blocking their path. They may also be attracted to insects which gather round the blades so an area that seemed clear in a pre-construction risk assessment could end up having any bats*." (Telegraph)

A report referenced in the article, Why Wind Turbines Threaten Endangered Species With Extinction published by Forbes in June 2019 states:

> Scientists say wind turbines are the single greatest human threat to *migratory* bats, which live in different habitats during summer and winter months. Some, like the hoary bat, fly south to Mexico during the winter as insects become more scarce in North America.
>
> In 2017, a team of scientists warned that the hoary bat, a migratory species, could go extinct if the expansion of wind farms continues.

Red Kites

The drive along the A44 from Hereford to the New Radnor "Gateway to Wales" enroute to the famous Rhayader Red Kite feeding station and Aberystwyth, also roughly follows the migration paths of many birds. A recent research study sponsored by the German Federal Ministry of the Environment determined that "Red Kites (*Milvus milvus*) are the second most often reported species in relation to collisions with wind turbines in Germany." (Source)

The multi-sourced article, The Red Kite : decimated by wind farms in the EU states that,

> There is abundant evidence that raptors in general, and Red Kites in particular, are at risk when wind turbines are erected within their breeding territories, or in areas surrounding their roosting places. See : LINK to Power Point presentation on Red Kites and Wind Farms
>
> A major flaw in the present system is that environmental impact studies are being financed and controlled by the windfarm developers themselves: **it is a "fox-in-charge-of-the-hen-house" situation.** It is unacceptable, and this biodiversity-threatening aberration must be addressed urgently.
>
> The absence of **cumulative impact** studies for wind farms at national and European levels is another serious deficiency in the EU conservation policy of the Red Kite.

Red kites are protected under the Wildlife and Countryside Act 1981 and in October 2016 a judicial review was undertaken when a proposed wind farm was rejected. Developer

Mynydd y Gwynt challenged then Energy and Climate Change Secretary, Amber Rudd's, refused permission for the proposed wind farm.

> Her [Amber Rudd's] concerns centred on it being near the Elenydd Mallaen special protected reserve and she was unconvinced it would not pose a threat to red kites.
>
> However, the company challenged the decision, saying the threat to the birds was "nil" and Ms Rudd misunderstood steps it would take to safeguard them.
> But their claims were rejected by Mr Justice Hickinbottom who ruled that Ms Rudd made no legal error.
>
> He said there were "important unknowns" in the case.
>
> These included doubts about the number of red kites that might stray from the special protection area to forage on the site of the proposed wind farm. (BBC)

The Red Kite is the proud symbol of Powys and another draw for tourists, many of whom visit the feeding station near Rhayadar. It would be more than a crying shame, criminal in my opinion, if the foraging and breeding grounds of Red Kites in Wales are not taken into account by Welsh Government along with wind and solar developers, particularly since they have been brought back from near extinction.

It should be noted that in March 2019, "A new study finds that around 1,200 tons of insects [including bees] are killed p.a. by wind turbines in Germany alone." (Source)

This information with regard to just a few of our precious birds and the insects which many feed upon, and enables plant life to flourish, supports the contention that wind turbines are not clean nor green, and that their proliferation and use will do the exact opposite of "saving the planet".

Societal and economic impact of reliance upon renewable energy sources

"Energy is the essential driver of modern civilisation. World GDP this year is estimated at $88 trillion, growing to $108 trillion by 2023, with the energy sector then being of order $10 trillion. But renewables have played, and will continue to play, a peripheral role in this growth. Industrialisation was accompanied by a steady and almost complete reduction in the use of renewables (Figure 4)." (See source document: Energy Utopias and Engineering Reality lecture, 11 November 2019)

> Germany's renewables leadership has mostly been in demonstrating the difficulties of using renewables on the grid. The successes of renewables are usually reported in summer when electricity demand is at its lowest. But in winter, when the solar panels are covered with snow and there are week-long anticyclones, the German grid gets very little electricity from renewables. Indeed, over the winter of 2016–7 there were two periods, each of ten days, when little or no renewable energy was generated. Germany's power storage capacity – mostly hydroelectricity – was woefully inadequate to meeting this shortfall. Total electricity consumption in both of these periods was 800 times what dams could store and generate. This is not atypical in developed countries. The total pumped storage capacity in the USA would run its grid for three hours, while the installed battery storage would run it for five minutes.

Germany's push to lead the way in renewables based energy sector has had serious consequences. On 11 November 2019, the German online weekly FOCUS reported that Germany Pulls Plug On Wind Energy As Industry Suffers 'Severe Crisis' and that "cuts by wind energy giant Enercon will lead to 3,000 layoffs. According to Enercon chief executive Hans-Dieter Kettwig, "politicians have pulled the plug on wind energy."

Subsidies cut

Once lavished with huge incentives, the German wind industry is being hit hard after the government recently ended the huge subsidies that were once aimed at expanding the installation of wind energy capacity.

Power grid operators had been struggling to keep the grid stable due to erratic feed-in and the subsidized feed-in of wind energy caused German electricity prices to become among the most expensive worldwide.

Fierce opposition from hundreds of protest groups

Moreover, hundreds of citizen protest groups have sprouted and since become a formidable force pushing for the stop of proposed wind projects.

Not only have wind parks scarred the German landscape and destroyed habitats nationwide, but they have also been shown to be a real health hazard to humans living in their proximity through the low-frequency infrasound they emit. Enough is enough, citizens say.

3,000 job cuts in the works

FOCUS reports: "The crisis in the German wind energy industry is worsening. According to the 'Süddeutsche Zeitung', hard cuts at the largest German manufacturer Enercon will cost 3,000 jobs."

Next year Enercon will also cut contracts with suppliers, sending a wave of job losses across the industry. "If supply contracts are terminated as planned, many of these companies are threatened with extinction," FOCUS reports.

FOCUS notes that the layoffs will hit regions that are already economically weak. "At the Aurich and Magdeburg locations, 1,500 jobs will be cut, according to the company. At the company headquarters in Aurich, 250 to 300 jobs are affected."

Stricter regulations for wind parks, greater setback distances

Not only have the subsidies for German wind parks been cut back, but also setback rules will become more strict in order to protect homes and residents from landscape blight and infrasound.
In the future, wind parks will need to keep a greater distance away from residential areas.

The current CDU/CSU/SPD government wants to keep at least one kilometer between wind power installations and residential areas in the future. This will make many proposed projects impossible. (Cont'd)

There have been numerous reports in the last few years detailing how the proliferation of industrial wind plants in Germany have wreacked havoc on many levels, including the grid, as electricity prices trebled putting an increasing number of vulnerable people into fuel poverty.

It is my understanding that the initial catalyst for the yellow vest protests in France was the imposition of further carbon taxes by the Macron government, whilst energy costs were rising as a result of France moving away from highly efficient zero emission nuclear energy to follow the currently politically expedient “green” movement which is green in name only.

This video published 7 November 2019 takes a look at energy poverty and economic losses brought on by poorly thought-out Green policies: Europe’s Green Fall

Please note this article published by The Telegraph this past Sunday:

> **Review launched into onshore impact of offshore wind farms**
> by Steve Bird | 10 November 2019
>
> The energy minister is to launch a review into the impact wind farms have onshore amid claims the countryside is being “concreted over” with substations and cable corridors built as supporting infrastructure.
>
> The move has been welcomed by campaigners who have been fighting proposals in the East of England to build substations and cable trenches “the size of Wembley stadium” to get electricity from wind farms to the National Grid.
>
> The activists are urging energy companies and the National Grid to develop an “offshore ring main” where the wind farms come online at the coast rather than inland.
>
> Andrea Leadsom, the secretary of state for business, energy and industrial strategy, has announced the review after meeting a delegation of MPs from Suffolk and Norfolk last month.
>
> George Freeman, who is standing again to be Conservative MP for Mid Norfolk, has written to campaigners explaining how the review would analyse the environmental impact caused by a network of cable trenches and substations, as well as the possibility of an alternative offshore ring main.
>
> He wrote: “We will be able (after the election) to look properly at the overall environmental implications for the offshore and onshore wind infrastructure as a whole.
>
> “Norfolk and Suffolk has some of the most beautiful, valued and recognised wetland and onshore coastal habitats. It would be madness to damage these special environments by bringing renewable energy onshore in an environmentally damaging way.”
>
> Campaigners say the southern North Sea is becoming the country’s “offshore energy powerhouse” with up to ten wind farms proposed.
>
> While campaigners are not opposed to renewable energy at sea, they are concerned that planning permission for additional vast onshore plants are being given the greenlight because it deemed essential power network infrastructure.
>
> Fiona Gilmore, of SEAS, the Suffolk Energy Action Solutions group, said residents fear major onshore plant was being rushed through.

> “We are totally in favour of offshore renewables and wind energy but the delivery of that energy needs to be implemented in a responsible way, avoiding unnecessary devastation,” she said.
> “Scottish Power Renewables [SPR] is planning to build a concrete jungle on virgin, coastal countryside to bring offshore wind energy onshore to connect to the Grid.
>
> “SPR has not been put under any pressure to look for existing brownfield sites and there is no impetus on firms to develop offshore wind energy transmission infrastructure solutions. “We need to be world leaders in the delivery of green energy not just in terms of producing that energy, otherwise that energy is no longer green.”
>
> SPR, one of a number of energy companies building wind farms in the southern North Sea, was last night unavailable for comment.

Although I may have missed it amongst all of the NDF materials, I am surprised that it focuses upon large-scale wind and solar developments in rural Wales, but does not mention off-shore wind farms. This is even more surprising given that this very detailed lengthy report dated December 2018 was prepared for the Welsh Government: Future Potential for Offshore Wind

Why is the Welsh Government pursuing such an aggressive policy of 70% renewables by 2030, when our emissions are low and it is well known that we already export more energy than we use?

The Welsh Government would be well advised to learn from the experiences and failures of moving to heavy reliance upon renewables to bring about a desired utopian society. The reality of the devastation these sort of “green” policies have had in Germany and Austrialia (see Suicide Watch: Insane Wind & Solar Obsession Helping Wreck Australia’s Economy) in paticular, is that the complete opposite has occurred.

For the reasons I have set out above, and for many others which I do not have time to detail, I do not support the provisions of the NDF Policies 10 – 13. I feel that they are ill conceived and would result in irrepairable damage to the landscapes and environment, resulting in harm to the well-being of residents, and the critical farming and tourism-based economy of rural Wales.

The Campaign for the Protection of Rural Wales said the NDF could lead to the "widespread industrialisation and irrational destruction of our landscapes”. (BBC)

In the same BBC article an unamed Welsh Government spokesman is quoted as saying,

> "Acceptance of landscape change cannot be assumed, it must be democratically mandated. In England, on-shore wind farms require majority local approval and Welsh communities should have no lesser rights.”

I most certainly hope that the Welsh Government will uphold this statement about local democracy, especially given that the vast majority of residents in Wales are increasingly of the opinion that local democracy no longer exists in practice.

It has been stated that there is a very tight timeframe in which the Welsh Government seeks to push through its unsound policies to become legislation before the next elections in 2021. We absolutely cannot let this happen.

I reiterate the conclusions of CPRW, which I fully support, “that the all-important Renewable Energy assessment within the NDF is so misconceived and error-laiden that it is unfit for purpose, should be removed from the NDF, and should be re-written prior to a re-consultation.”

The map below with its very striking oblique view, which combines the NDF’s Priority Areas, along with the National Parks and Areas of Outstanding Natural Beauty, illustrates well the potential close proximity of industrial wind and solar plants which have the potential to destroy many features of our precious landscape including the far reaching views, the birds, bats, bees, flora, fauna and human health. It is imperative that the protection and preservation of the unique features and history of wales is foremost in any policies which the Welsh Government implements. For the sake of our children and future generations it is crucial that the NDF is not permitted to proceed in it’s present unsound form. It is not fit for purpose.