

Dartmoor Local Plan 2018-2036

Final Draft Local Plan Consultation: 16 September – 1 November 2019

Response by South Dartmoor Community Energy Limited

PART A - About You

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	A business	☐	A visitor	☐	A statutory agency	☐	Other (specify below)	☐
Other								
Job title (where relevant)	Director							
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On behalf of (where relevant)								
Did you submit comments on the Regulation 18 (First Draft) Local Plan?	Yes	☐	No	☒				

* Required field

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Your personal data will be securely held by Dartmoor National Park Authority for the purpose of assisting with the Local Plan Review process. To ensure an effective and fair examination, it is important that the Inspector and all other participants in the examination process are able to know who has commented on the plan. For the purposes of the examination, we will share your personal details and representation with the Inspector appointed, and publish your name and representations as part of a report on our website. For more information please refer to our [Forward Planning Privacy Notice](#).

Tick the box below if you would like to be added to our Local Plan consultee database and kept up to date with the Local Plan Review process and other planning policy matters.



I would like to be added to the Local Plan consultee list

A. Background

- A.1 South Dartmoor Community Energy Limited (SDCE) was established in early 2016 and officially registered in June 2016. We are a not for profit community benefit company with **directors** and members drawn principally from the local community. In 2015 the founder directors of SDCE successfully applied for a **Community Energy Accelerator Grant** from RegenSW and Devon County Council to fast track the creation of the new community energy company.
- A.2 SDCE emerged from the PL21 Transition Town initiative and represents the PL21 postcode communities of Ivybridge town and the parishes of Cornwood, Ermington, Harford, Modbury, and Ugborough in addition to the PL7 postcode parishes of Shaugh Prior and Sparkwell. Both postcode areas straddle the Dartmoor National Park (DNP) boundary.
- A.3 SDCE has an interest in the 4.3MW Portworthy solar array at Lee Moor and is currently developing a 32 unit zero carbon, low cost housing development at North Filham in the parish of Ugborough on a 2.7 ha site adjacent to the DNP boundary.
- A.4 Since its inception SDCE has been offering energy advice throughout the South Hams area with to date hundreds of free home visits and regular public events.
- A.5 Net Zero Heroes is a new project in 2019 from SDCE to help families take climate action and reduce their own carbon footprints.

1. SDCE commentary on the Final Draft Local Plan

- 1.1 It would be possible in the customary way to respond to the detail of the plan paragraph by paragraph and policy by policy. However this would be unnecessarily repetitive and somewhat pointless as SDCE's criticism of the plan is at a very high level and questions the fundamental principles that underpin the purpose of the plan.
- 1.2 SDCE's approach therefore will be to set out a vision of an alternative set of development priorities that we consider to be fully aligned with addressing the global challenges we can no longer ignore, challenges that are impacting us now and will continue to do so for the foreseeable future.
- 1.3 The preamble entitled '*Strategy*' effectively sets the scene for the plan with:

'Protecting the National Park's special qualities'

and

'Major development will not take place in the National Park other than in exceptional circumstances.'
- 1.4 It is not evident that there has been any significant changes introduced between the 2006 – 2026 DNP Local Plan and the Final Draft of the proposed 2018 – 2036 Local Plan. There is certainly no acknowledgement of either an impending Climate Emergency or Extinction Crisis in the latest draft plan.
- 1.5 The DNP Authority (DNPA) itself declared a Climate Emergency on 26 July 2019¹ and signed the Devon Climate Declaration² on the same day but this has not lead to any amendments to the draft plan.

¹ NPA/19/020

² DCC; 22 May 2019

- 1.6 In summary this draft plan is very much a proposal for 'business as usual'. It is designed to preserve the status quo.
- 1.7 However it is a plan that will provide the framework for development in the DNP for the next 18 years. It is widely acknowledged that a continuation of business as usual for even a few years would make The Paris Agreement of limiting global heating this century to 2°C, let alone 1.5°C, almost impossible to achieve.
- 1.8 With this in mind, and after careful examination of the plan, it would be hard for anyone to conclude that a business as usual approach is fit for purpose in the current climate.

2. Climate Emergency and Extinction Crisis

- 2.1 Addressing the global Climate Emergency, the global Extinction Crisis and alleviating fuel poverty are SDCE's top priorities. We believe that the former two are the overarching issues of our time and that we will only be able to respond adequately to these threats and achieve sustainable development if we eradicate poverty.
- 2.2 SDCE concurs with the Intergovernmental Panel on Climate Change (IPCC) that:

*"Limiting global warming to 1.5°C would require rapid, far-reaching and unprecedented changes in all aspects of society. With clear benefits to people and natural ecosystems, limiting global warming to 1.5°C compared to 2°C could go hand in hand with ensuring a more sustainable and equitable society."*³
- 2.3 Similarly we take note of the recent WWF report which concluded that:

*"The astonishing decline in wildlife populations shown by the latest Living Planet Index – a 60% fall in just over 40 years – is a grim reminder and perhaps the ultimate indicator of the pressure we exert on the planet."*⁴
- 2.4 Both of these threats are well documented and the latter is considered to be of such urgency that it is soon to become the focus of a new BBC one-off programme presented by David Attenborough entitled 'Extinction: The Facts'.
- 2.5 In summary we believe that, in order to limit the catastrophic damage that will result from a business as usual response, everything that can be done to mitigate or adapt to these threats has to be done and has to be done as quickly as possible.
- 2.6 To preserve any semblance of life as we know it for future generations will require a fundamental change of approach to something resembling a war time mobilisation with rapid decision making at all levels of government. The difference being that this will be a war with no end in sight as the outcomes of the processes that our species has set in train will continue for centuries, if not millennia, to come.
- 2.7 SDCE believe that in order for the UK to achieve net zero greenhouse gas emissions (GHG) by 2050 Devon, with its disproportionate share of the UK's renewable energy (RE) resources, must achieve net zero by 2030 or sooner.

³ IPCC Press Release; Summary for Policymakers of IPCC Special Report on Global Warming of 1.5°C approved by governments; 8 October 2018

⁴ Living Planet Report 2018: Aiming higher; WWF; 2018

2.8 Mindful of the above we believe that the DNP Local Plan should aim wherever it possibly can to facilitate the following key objectives:

- Achieving net zero CO₂ equivalent (CO₂e) across the entire DNP area as soon as possible by:
 - maximising the potential for carbon sequestration. This can only be achieved by maximising the total biomass carrying capacity.
 - offsetting CO₂ production through maximising the exploitation of RE.
- Enabling the DNP area to contribute to its full potential in assisting Devon to achieve a target of net zero CO₂ by 2030 or sooner.
- Mitigating the Extinction Crisis by optimising the biodiversity of the DNP area.

3. Carbon Sequestration

- 3.1 Scientific evidence indicates that the original Holocene woodland that began to develop as the ice retreated some 11,000 years ago eventually became a closed canopy, partially kept open by grazing animals, at about 6,000BC. This woodland could accurately be described as temperate rain forest particularly in the wetter western side of the country.
- 3.2 It represented the pinnacle of biodiversity with maximal carbon carrying capacity. It was an ecosystem that we are unlikely to see again. Nevertheless it provides us with the ideal model or yardstick by which we can measure our efforts to mitigate and adapt to the threats that currently face us as a result of our past and ongoing lifestyle.
- 3.3 This climatic climax ecosystem persisted for the next two millennia. The first evidence of deforestation began about 4,000BC and gathered pace through the Bronze Age and early Iron Age when all of the current moors of southwest England were increasingly subject to agrarian settlement.
- 3.4 Settlers were attracted by the relatively thinner tree cover and lighter soils of the higher ground which made deforestation and subsequent tilling of the soil easier to achieve than in the denser forest and heavier soils of the lowlands.
- 3.5 Since then the deforestation has continued albeit at a slower pace until now, where all that is left of the original blanket forest are remnants mostly on slopes too steep to be worth clearing.
- 3.6 The current extent of the deforestation can be seen on the plan on the next page which appears in the *'State of the Park Report 2017'*.
- 3.7 This report identifies 12% of the park area as woodland. This is below the UK average of 13% but above the average for England of 10%.⁵
- 3.8 Actively managed forest plantations make up 56% of the woodland with 26% of the wooded area of the National Park classed as ancient semi-natural woodland, 294ha of which are *'plantations on ancient woodland sites'* (PAWS).
- 3.9 The true semi-natural ancient woodland therefore occupies less than 2,700ha of the park. This amounts to 2.83% of the DNP area.

⁵ Woodland Statistics; Forest Research; 13 June 2019

- 3.10 Section 3 moorland and woodland together occupy 83.9% of the park of which the moorland area must be, by deduction, 71.9%.
- 3.11 The State of the Park Report 2017 goes on to say
- “The conservation of the moorland is central to the National Parks fulfilment of its statutory duty to conserve and enhance the natural beauty of Dartmoor.”*
- 3.12 This is the dominant theme throughout the development plan and the DNP Management Plan 2014-2019 as it has been in all previous development and management plans.
- 3.13 We believe that this theme needs to be challenged. Is it natural? It is certainly of nature in that all of the elements that make up the assemblage of flora and fauna that constitute Section 3 moorland are natural and (with the exception of the domestic livestock and the ponies) the majority are native to the British Isles.
- 3.14 However it is not the assemblage of flora and fauna that nature left to its own devices would create ie. the climax ecosystem that existed within the DNP area 8,000 years ago prior to the commencement of human pastoral activity, effectively temperate rain forest.

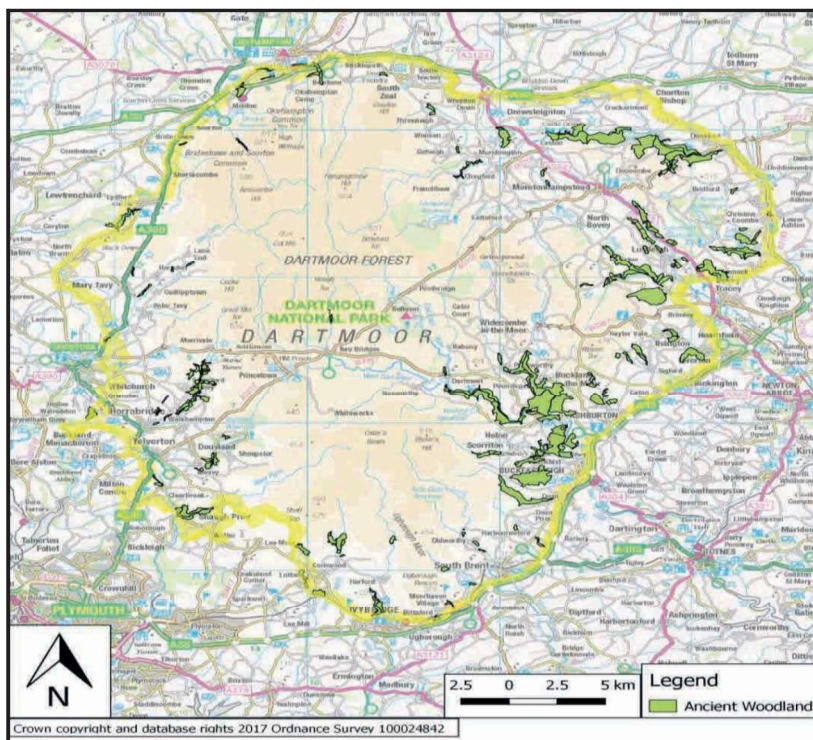


Figure 12 Ancient woodland within Dartmoor National Park

- 3.15 The moorland of today is a highly managed artifact. It is not a wild landscape it is completely tamed by the hand of man. Swaling is the term that describes the controlled burning of the moorland during the winter months. Apparently the following

“Overgrown vegetation on open moorland restricts public access and, during the warmer months, presents a significant risk of wild fires....”

is part of the justification. But actually it is to prevent the return of the natural succession which, if left unhindered, would eventually restore the rainforest.

- 3.16 The burning is supported, in fact largely undertaken, by the farmers and commoners to enhance the quality of the grazing for their livestock.

- 3.17 It is also supported by the DNPA, through the Ranger Service, as it maintains the moorland landscape with its long distance views that tops the list of the ‘*Special Qualities*’ of the national park.
- 3.18 Ironically when we see similar activity occurring in other parts of the world we react with horror and revulsion. Such is the prevailing attitude of the British media and the public to the recent increase in the destruction of the Amazon forest under the policies of the Bolsonaro regime in Brazil.
- 3.19 Clearly the encouragement of unregulated mining and the impact on indigenous tribes are significant differences between the activities in Amazonia and Dartmoor. But, whether it is forest burning for agriculture in Brazil or moorland burning for agriculture on Dartmoor, the purpose is to deforest the landscape and the result is that large quantities of CO₂ are released into the atmosphere.
- 3.20 How would we react to seeing a future map of the former Amazon rainforest area which depicted a situation parallel to the current Dartmoor map with only 2.83% of the tropical rainforest left unfelled?
- 3.21 It is SDCE’s view that the DNPA’s priorities need to change and that these changes should be reflected in the Development Plan.
- 3.22 It is no longer justifiable to place landscape at the top of the priority list. As we have indicated above the open, uninterrupted, long distance views from the moorland within the park come with a cost. That cost is that if this continues this area will play no part in addressing the Climate Emergency or the Extinction Crisis.
- 3.23 Maintaining the status quo will mean that the current carbon carrying capacity of the area will remain static as any new growth will be removed and released back to the atmosphere by the regular cycle of burning.
- 3.24 It does not have to be like this. The moorland area has the potential to lock up significantly more carbon than it currently does. Left alone this is precisely what it would do.
- 3.25 The management plan contains the following:

“Carbon and Energy – Dartmoor is an exemplar of carbon reduction and climate change adaptation through carbon storage, energy efficiency, decarbonising products, and the production of renewable energy and heat.”

We understand that DNPA is probably referring here to its own in-house policy to decarbonise and we commend it for its efforts to date which have resulted in a reduction of more than 40% since 2010. But, bearing in mind what we have pointed out in the paragraphs above and will go on to expand in the paragraphs following, we cannot accept that applying this to the wider ‘*Dartmoor*’ can be justified.

- 3.26 SDCE urges the DNPA to fundamentally change its priorities. Landscape, in other words the preservation of the deforested hillsides, should be deprioritised and replaced by policies that encourage and facilitate the regeneration of the natural woodland.
- 3.27 We note what the plan says on page 6 that the plan cannot
“control things which are not ‘development’, such as vegetation cover or land management”
 but there is still a policy referring specifically this subject.

- 3.28 **Strategic Policy 2.4(2) Conserving and enhancing Dartmoor's moorland heathland and woodland** aims to control development within areas of conservation importance. SDCE agrees with the principle of controlling development in these areas. But either this policy or new policies need to be developed to facilitate the transition to a more natural ecosystem in these conservation areas that is capable of maximising the biomass carrying capacity and hence carbon sequestration.
- 3.29 We believe that the ratio between moorland and woodland should be reversed as a matter of priority. Rather than 72% of the DNP being open heath and moorland we should aim for 72% woodland.
- 3.30 All that needs to happen is to stop the burning and the forest will rapidly return through the natural process of succession.
- 3.31 This would undoubtedly affect the grazing by reducing the available grass and conversely the presence of livestock will reduce the rate of woodland regeneration. However, such a reduction in livestock numbers is broadly in step with the current trend of reduced red meat consumption.
- 3.32 Young regrowth forest can lock up 6 tonnes of carbon per hectare per year. 72% of the park amounts to 68,700 ha⁶. Which means that reafforesting the moorland area of the park could sequester 412,000 extra tonnes of carbon per year.
- 3.33 To put this into context it is estimated by the Committee on Climate Change⁷ (CCC) in its 2018 Progress Report to Parliament that in the UK the average GHG emissions are 8 tCO₂e/person/annum if measured on a *production* basis or 13 tCO₂e/person/annum if measured on a *consumption*⁸ basis.
- 3.34 Therefore the 33,000 population of the DNP area will each year produce 264,000 tCO₂e on a production basis or 429,000 tCO₂e on a consumption basis.
- 3.35 One could therefore argue that this change of policy would just about allow the DNP area to become carbon neutral in terms of the resident population.
- 3.36 However this would not offset the CO₂ production by the 2 million day visitors⁹ to the park each year. Nor will it allow Dartmoor to make any nett contribution to the overall Devon County CO₂ sequestration.
- 3.37 Further policy changes would be needed to offset the atmospheric carbon generated by visitors or for the DNP to contribute to the county or national effort to achieve zero carbon.

4. Renewable Energy

- 4.1 There has been much in the news recently about climate emergency declarations. But there has been little or no guidance on the actions required to address the Climate Emergency.

⁶ DNP area is 954km²

⁷ The CCC is a statutory body set up under the 2008 Climate Change Act whose purpose is to advise the UK Government and Devolved Administrations on emissions targets and report to Parliament on progress made in reducing greenhouse gas emissions and preparing for climate change

⁸ Production basis is the CO₂ produced within the UK, consumption includes the net CO₂ produced by goods imported into UK less those exported.

⁹ Dartmoor Economic Profile; March 2016

- 4.2 DNP points to this in its own climate emergency declaration

“There is no precise definition of what constitutes action to meet a climate emergency but the purpose is to put climate (and environment) at the centre of policy and practice.”

- 4.3 To paraphrase UN Secretary-General António Guterres in his press briefing before the September 2019 Climate Summit

“Beautiful speeches (or words) are not enough.”

They need to be translated into action.

- 4.4 The draft local plan uses the term

“.....reduce/minimise impact on climate change...”

17 times, but nowhere does it mention any policies or actions that would significantly contribute to reducing climate heating.

- 4.5 Up to date information on the installed RE within the DNP does not seem to be available. The 2017 State of the Park document has some information on 2015 data¹⁰ where it appears that 9.1MW were in situ by the end of that year.

- 4.6 This consisted of a little over 6MW of PV, 1MW of biomass and a further 1MW consisting of a combination of hydro, wind and solar thermal in order of their relative contributions. There is another megawatt of air source and ground source heat pumps included. However these are not necessarily renewable and can only be counted if the electricity that powers them comes from an accredited renewable source.

- 4.7 So 8MW – 9MW of installed RE capacity at the end of 2015 perhaps a little more has been added since then, although this is not very likely as government incentives all but disappeared after the 2015 general election.

- 4.8 But what is the potential RE capacity of the DNP area?

- 4.9 The perhaps inconvenient but totally inescapable truth is that it is very large indeed.

- 4.10 The 72% of DNP that is open heath and moorland is by a huge margin the outstanding unexploited wind energy resource area in southern England.

- 4.11 It would have a theoretical carrying capacity of approximately 2.5 gigawatts (GW) of wind generators.¹¹ However siting constraints would probably limit the potential installed capacity to nearer 2GW.

- 4.12 There are compelling reasons for exploiting the Dartmoor wind energy resource in response to the Climate Emergency. Almost at the top of that list is the fact that virtually no one lives above the 300m altitude contour on the high moors where the wind turbines could be located.

- 4.13 In England, south of the Pennines, there is no alternative site where so many wind turbines could be installed without any significantly adverse impact on residential properties.

- 4.14 In terms of wind speeds, the wind resource, due to the mean altitude of the moorland, is again comparable to the very best sites in England south of the Pennines.

¹⁰ Page 47 to 48

¹¹ At a packing density of 3.6MW/km²

- 4.15 Furthermore the installation of wind turbines would not preclude the reafforestation of the moorland described above. It would take many years, if ever, for the trees to reach sufficient height to have any effect on the output or operations of the latest onshore wind turbines.
- 4.16 In terms of the socio economic benefits the rent paid to the landowners and commoners could offset any loss of earnings from the reduced grazing caused by the reafforestation of the area.
- 4.17 In addition 2GW of wind turbines would contribute:
- 3,800 jobs across the UK and £243m of gross value added (GVA)¹²
 - 2,000 jobs across the southwest and £139m of GVA
 - 490 jobs in the DNP and environs area and £37m of GVA
- 4.18 This 2GW of wind power would be more than enough to replace the combined cycle gas fired power station (CCGT) at Langage located less than 4 km outside the park's south west boundary. This will need to happen for Devon to go carbon neutral.
- 4.19 In practice 2GW of wind power on Dartmoor could generate 6.13TWh/annum¹³ of clean, green electricity compared with Langage's 3.76TWh and it would offset the production of almost 3 million tonnes of CO₂ per year from fossil fuelled power stations like Langage.
- 4.20 The Langage CCGT currently supplies enough electricity each year to supply 1m average UK households. If 2GW of wind power were installed in the DNP it would supply over 1.6m average households.
- 4.21 The rest of the DNP area, the 28% that is not moorland, would also have potential for smaller scale wind developments and, in addition, considerable potential for medium to large scale PV developments.
- 4.22** Clearly under the current draft plan none of this is possible. **Policy 6.6 (2) states:**
- "3. Large scale renewable energy development will not be approved"***
- 4.23 SDCE fails to see how a policy that sterilises the best renewable energy resource area in the south of England meets the requirement under the DNPA's own Climate Emergency Declaration to
- ".....put climate (and environment) at the centre of policy and practice."*
- let alone meet the IPCC's requirement for
- ".....rapid, far-reaching and unprecedented changes in all aspects of society."*
- 4.24 The inescapable conclusion, no matter how inconvenient it may seem, is that the DNPA cannot have been serious when they declared a Climate Emergency as they clearly had no intention of taking any significant action to address it.

5. DNP's contribution to Devon and wider UK targets

- 5.1 Dartmoor covers an area of 954km² within the county of Devon which itself has an area of 6,707km². Dartmoor therefore occupies a little over 14% of the county.

¹² Onshore wind - direct and wider economics impacts; Report by BiGGAR Economics for DECC and Renewable UK; May 2012

¹³ At 35% capacity factor

- 5.2 The population of the entire county of Devon (including Plymouth and Torbay) is 1.16m people. Referring back to the calculations in paragraphs 3.33 and 3.34 above, they will therefore be responsible for 9.28 million tCO₂e/annum on a production basis or 15.08 million tCO₂e/annum on a consumption basis.
- 5.3 At 6t/ha it would take between 1.5 and 2.5 million hectares or 15,000 to 25,000km² of reafforested land to sequester this amount of CO₂ on an annual basis. This equates to between 225% and 375% of the total landmass of the county.
- 5.4 So, unlike Dartmoor, Devon cannot become carbon neutral through reafforestation alone. It could make a contribution, but clearly other measures will have to make up the lion's share for the county to meet a carbon neutral target.
- 5.5 Ensuring that new housing achieves passivhaus standard and retrofitting the existing housing stock could reduce the requirement for heat energy within the domestic sector but progress in this area will be slow without radical policy shift and incentivisation.
- 5.6 Reducing emissions from transport, which is the most carbon intensive sector of the economy, might prove easier to achieve. But extensive switching to battery powered vehicles could double the amount of electricity generation required in the UK compared to today.
- 5.7 There is further potential to develop medium to large scale PV within the county, although it is currently constrained by a lack of spare capacity on the local WPD electricity distribution network. This is due to the amount of PV that has already been installed or has booked capacity.
- 5.8 For Devon, as for Dartmoor, wind power is the major RE resource. Of which Exmoor is the outstanding example of hitherto unexploited wind resource for all of the same reasons outlined for Dartmoor in the previous section.
- 5.9 The area of Exmoor is 692.8km², of which 29% or 201km² is in Devon. However from a wind resource viewpoint, this part of the moor is the prime resource area being of generally higher altitude and close to the sea on the windward side of the park.
- 5.10 Although of somewhat lower altitude the wind power density is likely to be very similar to the DNP moorland. Similarly some 70% of the area could reasonably be developed for wind power.
- 5.11 Applying the same criteria as above for Dartmoor would suggest a theoretical wind power carrying capacity of a little over 500MW of which perhaps 400MW could be developed after allowing for site constraints.
- 5.12 Apart from the moors of Dartmoor and Exmoor there are no other extensive areas within the county that are devoid of residential development. Clearly if development restrictions were eased within the national parks then similar measures would apply to the AONBs which would enable further development.
- 5.13 The prime wind resource areas would be the coastal locations to the west of Exmoor, west of Bideford to the North Cornwall border, including Hartland and, to a lesser extent, parts of the South Hams.
- 5.14 Other sites, further from the coast and therefore with lower wind speeds could be found on the mid-Devon moors and to the west and north of Dartmoor. But wind development in all of these areas outside the national parks will be constrained by proximity to residential property.

- 5.15 Nevertheless there is undoubtedly the potential for another 600MW to 900MW of wind power to be installed in these areas outside the national parks. Firming up on a more precise estimate would require detailed assessment of siting constraints over a significant proportion of the county.
- 5.16 In conclusion Devon, by virtue of its location in the exposed southwest of England, is well endowed with wind energy resource and approximately 60% to 70% of that resource is located on the moorland of Dartmoor.
- 5.17 What will be required for Devon to go carbon neutral? As shown above it would require between two and four times the landmass of the county devoted entirely to forestry to achieve it by carbon sequestration.
- 5.18 What would it take for Devon to go zero carbon by deploying wind power alone?
- 5.19 A simplistic calculation based on the 8 and 13 tonnes per person per year used by the CCC and on the assumption that all new wind power would displace electricity produced gas fired power stations, which in turn produce 487g CO₂/kWh of electricity generated,¹⁴ would be 20TWh/annum and 31TWh/annum respectively.
- 5.20 In paragraph 4.19 above we saw that 2,000MW of wind turbines on Dartmoor could produce 6.13TWh/annum. Even if the rest of Devon including Exmoor could produce the same again, which is unlikely, there would still be a very significant shortfall in meeting even the lower 20TWh/annum figure.
- 5.21 The inescapable conclusion from the above is that, even if all of the potential of Dartmoor and Exmoor to sequester carbon and to produce clean electricity is developed and exploited, and similar efforts are made throughout the county of Devon, as well as making homes and workplaces more energy efficient, it will still be touch and go as to whether Devon can achieve its zero carbon target by relying upon its own in-county resources. Without the exploitation of the Dartmoor or Exmoor wind resources it will be an impossible task.
- 5.22 We at SDCE hope that this goes some way towards informing the policy vacuum that surrounds appropriate responses to the Climate Emergency, particularly with reference to the
“There is no precise definition of what constitutes action to meet a climate emergency....”
line in the DNP Climate Emergency Declaration.
- 5.23 If this is the situation with respect to Devon then how will other counties that are more densely populated and have no significant wind energy resource achieve carbon neutrality? And how will the major cities achieve it?
- 5.24 Perhaps this is what the IPCC was referring to when they said
“Limiting global warming to 1.5°C would require rapid, far-reaching and unprecedented changes in all aspects of society.”
and it is certainly the logic underpinning what we said in paragraph 2.5 above
“.....everything that can be done to mitigate or adapt to these threats has to be done and has to be done as quickly as possible.”
and also in paragraph 2.6

¹⁴ RSE; Scotland’s Energy Future; June 2019

".....will require a fundamental change of approach to something resembling a war time mobilisation with rapid decision making at all levels of government."

6. Optimise the Biodiversity

- 6.1 The word biodiversity is used 80 times in the draft local plan and it is used 14 times in the management plan but it rarely occurs in association with references to the national park's 'special qualities' a descriptor that is used 69 times in the draft plan.
- 6.2 It would seem that it is used mostly to justify activity that the park is already engaged in but that augmenting or increasing biodiversity, not to mention optimising it, in order to slow down or reverse the Extinction Crisis even on a local scale is apparently not seen as part of the National Park's purpose.
- 6.3 Perhaps this is why the International Union for Conservation of Nature (IUCN) which categorises national protected areas around the world puts the UK national parks not in category Ia – Strict Nature Reserves; or Ib - Wilderness Areas; or even II – National Parks but in category V – Protected Landscape/Seascape areas.
- 6.4 In the UK we do not have any large areas that are protected specifically for optimising wildlife value or biodiversity. The RSPB with their national network of reserves are probably the exemplar body but as they freely admit

"We base our work on good analysis of the threats facing birds and the environment."
they concentrate on birds.
- 6.5 SDCE believes that preserving and preferably enhancing and ultimately optimising biodiversity is an issue of Overriding Public Interest.
- 6.6 Insect populations worldwide are plummeting¹⁵ threatening a

".....catastrophic collapse of nature's ecosystem."

More than 40% of insect species are declining and a third are endangered, the analysis found. The rate of extinction is eight times faster than that of mammals, birds and reptiles. The total mass of insects is falling by a precipitous 2.5% a year, according to the best data available, suggesting they could vanish within a century.
- 6.7 Insect biomass is 17 times greater than total human biomass and they form the base of so many of the food chains essential to vertebrate animals, ourselves included.
- 6.8 SDCE would like to pose the question – If it is not our National Parks that have the responsibility for conserving and enhancing Britain's biodiversity, then who should be doing it? And if the answer is no one then we believe that is an act of gross dereliction of the duty of care on the part of our nation.

¹⁵ Worldwide decline of the entomofauna: A review of its drivers; Sanchez-Bayo; Nature Conservation; April 2019

7. Sustainability

- 7.1 The word ‘sustainable’ appears 99 times in the draft plan and paragraph 1.3.1 outlines the customary test

“Sustainable development is defined as meeting the needs of the present without compromising the ability of future generations to meet their own needs.”

SDCE can also help with the citation (which is missing from the draft plan) for this test. It comes from the Brundtland Report – *Our Common Future*; 1987.

- 7.2 However we know a great deal more now than we knew in 1987 when the IPCC had not yet been established. And knowing what we now know it is hard to see how the development plan, as currently drafted, would meet the sustainability test.
- 7.3 SDCE fails to understand how policies that deny access to the largest renewable energy resource in the south of England cannot be said to compromise the ability of future generations to meet their own needs, when, as we have demonstrated above, Devon will not achieve carbon neutrality without it.
- 7.4 DNPA goes on to expand on the definition in terms of defining sustainable development in ***Strategic Policy 1.2(2) Sustainable development in Dartmoor National Park***. SDCE endorses this policy in general with the exception of clauses 1. a) and 1. j).
- 7.5 SDCE cannot endorse clause 1. a) because, as we have explained in previous sections of this response, we do not consider the Second Purpose of the National Park to be sustainable when it refers to special qualities when we know that preserving the open moorland tops the list of special qualities.
- 7.6 Policy 1.2(2) 1. a) is not sustainable development. In fact it is quite the opposite. It is effectively the prevention of sustainable development. It will prevent a huge potential carbon sink and source of carbon offsetting from being available to contribute to mitigating the Climate Emergency.
- 7.7 It will also prevent the same area of the park from increasing its biodiversity and contributing to mitigating the Extinction Crisis.
- 7.8 On balance we can support the First Purpose of the National Park, although we may have a difference of opinion as to what constitutes natural beauty.
- 7.9 For similar reasons we would not be prepared to endorse 1. j) which again refers to character and quality. We believe the prevailing character and quality need to change, or perhaps revert would be more appropriate, to the character and quality of the truly natural ecosystem for this area.
- 7.10 SDCE’s vision for the monumental task of achieving a carbon neutral society is that it should be community led by not-for-profit organisations that reinvest any monetary gains from developing renewable or energy storage projects back into the effort to decarbonise and alleviate poverty within the wider local community.
- 7.11 There are 23 local community energy organisations in Devon of which SDCE is one. These organisations are in the process of incorporating Devon Energy Collective (DEC). DEC is a special purpose community interest company (CIC) wholly owned by its members, the not-for-profit local community energy companies.

- 7.12 The purpose of DEC is to raise finance and develop projects that are beyond the reach of the smaller local companies. Like its members DEC is also a not-for-profit company, so any profits resulting from its activity will not leave the local area but will be reinvested locally.
- 7.13 Projects like the development of the RE potential of Dartmoor and ploughing any profits back into retrofitting the housing stock, carbon sequestration, biodiversity and alleviating fuel poverty in the wider Dartmoor area is precisely what the founders had in mind when they initiated the formation of DEC in 2018.
- 7.14 We believe that, if this vision comes to pass, it would deserve the accolade that:
- “Dartmoor is an exemplar of carbon reduction and climate change adaptation through carbon storage, energy efficiency, decarbonising products, and the production of renewable energy and heat.”*
- It would be an initiative that could be repeated in other parts of the county and would undoubtedly encourage other communities beyond Devon follow the example.
- 7.15 This is surely the model for sustainable development in the 21st Century.

8. Wider implications

- 8.1 There is no reason to continue to rely upon the technology of the early industrial revolution which was based on harnessing the energy liberated from combustion. Combustion technology is essentially the controlled oxidation of the fossilised remains of former life on earth.
- 8.2 The primordial atmosphere of our planet Earth 4.5bn years ago did not contain free oxygen. It consisted principally of carbon dioxide with traces of other gases such as methane and ammonia. Nitrogen, being inert, started to accumulate in the atmosphere as a result of volcanic activity caused by continents colliding, what we now call plate tectonics.
- 8.3 Somewhere between 2.8bn and 2.7bn years ago primitive cyanobacteria started to produce oxygen as a by-product of photosynthesis. Oxygen became resident in the atmosphere some 2.45bn years ago, but it was another billion years before concentrations were sufficient to enable animals to evolve.
- 8.4 Since then, although nitrogen to oxygen ratios have fluctuated they have done so within a relatively narrow range. The oxygen concentration is probably maintained by the interaction between photosynthesising lifeforms, bacteria and plants, that produce oxygen from CO₂ and animals and other lifeforms that use up oxygen in respiration to regenerate CO₂.
- 8.5 For 60% of the history of our planet life on Earth has been systematically removing CO₂ from the atmosphere and trapping it underground in various forms. For some 500m years the bodies of phytoplankton and zooplankton sank to the ancient ocean floor, were buried under sediment and under the action of heat their remains turned into oil or gas. About 300m years ago a similar process started to occur, where the remains of terrestrial plants mostly mosses and ferns became trapped under sediment and again under the influence of temperature and pressure formed a carboniferous rock – coal. In tropical seas about 100m years ago microscopic marine algae called coccoliths developed shells made of calcite. When they died and sank to the ocean floor their remains gave rise to the chalk and limestone layers of sedimentary rock.

- 8.6 We know that for the past 800,000 years the CO₂ concentration in the atmosphere has varied between 180 parts per million (ppm) during glacial periods to 280ppm during the warmer interglacials. A peak concentration of 300ppm occurred once some 340m years ago.¹⁶
- 8.7 The concentration now is 408.55ppm¹⁷, almost 50% higher than it was in 1760.
- 8.8 We have achieved this 50% increase in just 259 years since the start of the industrial revolution, an infinitesimally short period on the geological timeframe.
- 8.9 We have done this by systematically mining these ancient deposits to extract energy, in the case of the fossil fuels, or cement from the fossil limestone. Either way the result is that CO₂ that was locked up over the course of hundreds of millions of years is being released into the atmosphere.
- 8.10 These emissions are still rising steadily at 2.5ppm/annum and unfortunately there is no evidence of any levelling off let alone decrease.
- 8.11 Nevertheless SDCE's view is that a zero carbon world is achievable but it requires a radical change of mind-set and practice. We as a species need to evolve beyond fire, the primary tool of primitive man. We need to consign combustion technologies to the history books.
- 8.12 Whether it is the steam engine, internal combustion engines, gas turbines or jet engines combustion is always inefficient, only partially converting the energy available in the fuel to useful work. With diesel and petrol engines it is 20 – 35%, jets 50% and CCGTs peak at 62%. This means that some 40% or more of the energy in the fossil fuel is wasted and converted into heat in the atmosphere.
- 8.13 Combustion plant generate volatile waste products, pollutants, not just CO₂ but carbon monoxide, sulphur dioxide, nitrogen oxides, unburnt hydrocarbons, particulate matter and dioxins. This potentially lethal cocktail will inevitably be released into the atmosphere.
- 8.14 We need to stop the burning, whether it is burning fossil fuels or burning forests and moorland.
- 8.15 We have the technology to do that. Wind power, hydro power and photovoltaics to create electricity, batteries and other emerging technologies to store it and heat pumps to take some of that power and convert it efficiently for space and water heating are all examples of technologies that do not consume oxygen and release CO₂.
- 8.16 They are benign technologies that more closely resemble the mechanical and electrical processes that nature itself has developed to produce living systems.
- 8.17 SDCE would advocate that there should be policies in the DNP Development Plan which infer a presumption in favour of developments which incorporate these technologies to mitigate CO₂ production.
- 8.18 We believe that only when we achieve the deployment of these technologies across the board and exhibit combustion devices exclusively as curiosities in museums can we truly say that we are on a path to sustainability.

¹⁶ Climate Change: Atmospheric Carbon Dioxide; NOAA; Rebecca Lindsay; 19 September 2019

¹⁷ Mauna Loa Observatory, Hawaii (Scripps); Preliminary data released 7 October 2019

9. Conclusion

- 9.1 For the avoidance of doubt SDCE would like to take this opportunity to express that we are optimistic about the task that faces us in responding to the Climate Emergency and the Extinction Crisis.
- 9.2 We would also like to assure the DNPA of our intentions that, in our role as a community energy company based in an area that reaches across the DNP boundary that, notwithstanding all of the above, we would like to work in partnership to develop a policy framework that will stand the test of time and be truly sustainable.
- 9.3 For the sake of the generations that will follow us we have to succeed in developing strategies to mitigate and adapt to both the Climate Emergency and the Extinction Crisis.
- 9.4 Hitherto it has always been the practice of local authorities to seek leadership and guidance from central government. The Climate Emergency has already created a precedent that might lead to a new paradigm where it is local and sub-national authorities that take the lead in response to the wishes of their communities.
- 9.5 The response to the Climate Emergency is a notable case in point. Devon County Council declared a Climate Emergency on 21 February 2019, Plymouth City Council on 18 March and Teignmouth on 18 April. The national Climate Emergency was declared on 1 May 2019 and even then it was not instigated by the party in government.
- 9.6 If this is a sign of the times and a function of locality moving faster to address perceived problems within communities than central government is capable of doing on a national scale, then we are comfortable in pursuing that approach.
- 9.7 However we will still be pressing hard through our local MPs and other national representatives to expedite the policies that will protect wildlife, encourage biodiversity and facilitate the transition to a carbon neutral economy and a sustainable future.