

The County Farms Estate
Interim Devon Carbon Plan 2020

Report of the Head of Digital Transformation and Business Support

Please note that the following recommendations are subject to consideration and determination by the Committee before taking effect.

Recommendation(s):

That the Committee notes the report and:

- (a) Reaffirms the resolutions made on 24 February 2020 and goes further to:
- (b) Volunteer the Estate resource as an opportunity for the Climate Emergency Partners to trial and demonstrate potential best practices and innovations in farming designed to reduce the emissions from agricultural activities and/or to sequester more carbon. It is noted however that in order to deliver best practice demonstration trials, additional external capital investment will be required, as identified in the Interim Devon Carbon Plan itself.
- (c) Commissions a report to map and identify the natural capital account and associated base line carbon sequestration capacity of the Estate and individual holdings.
- (d) Conducts a study tour with tenants to the Dartington Hall Estate to explore the potential opportunities for Silviculture on the Estate.
- (e) Provide tenants with an ongoing programme of training events to better inform alternative farming practices designed to reduce carbon emissions and sequester more carbon, many of which can be proven to enhance overall farm profitability.
- (f) Once the 'test and trials' period has concluded and the Environmental Land Management Scheme (ELMS) is adopted, signpost tenants to scheme options that reward tenants financially ('payments for public good') for reducing carbon emissions, enhances natural capital, and provides additional or improved carbon sinks.
- (g) Commission a report to monetise the value of existing carbon sinks in the form of tradable carbon credits in order to generate additional revenue for inward investment in appropriate localised tree planting on potential pockets of surplus marginal land.

1.0 Background

1.1 On 24 February 2020 Report BS/20/02 'NFU Report – Achieving Net Zero – Farming's 2040 Goal', was presented to the Committee. Members subsequently resolved under minute reference FE/120:

- "(a) that the Land Agents be invited to explore options for the County Farms Estate and its tenant farmers to work towards achieving Net Zero greenhouse gas emissions;
- (b) that the County Farms Estate volunteer as a research and development resource and as part of a potential network of demonstration farms; and

(c) that consideration be given to identifying the carbon sequestration capacity of the County Farm Estate key existing environmental features and in particular its soils."

1.2 Since the above resolution was made, the Covid-19 pandemic has frustrated some initiatives and ability to deliver on the resolutions. That said, the following initiatives have and are being delivered:

- (a) Bennamenn investigation into the viability of methane harvesting through the Devon County Council 'AgroRes' Project funded by Interreg Europe. The Cornwall Council Farms Estate is already investing capital in new infrastructure required to support the harvesting of methane from 6 farms on its Estate. The methane will be harvested and used on site and to fuel the Cormac fleet of vehicles. A sample of Devon County Farms Estate dairy holdings were reviewed as a desktop exercise to determine if the initiative could be replicated this side of the Tamar. Unfortunately, the Bennamenn model currently requires a new build slurry storage system on a greenfield site and methane harvesting technology cannot (currently) be retrofitted to existing slurry stores. Given that the Devon County Farms Estate is already well equipped with NVZ compliant slurry stores, the Bennamenn methane harvesting model is currently unlikely to present a viable business model for the majority of holdings. That said, there are other products on the market that may be capable of being retrofitted to existing concrete box or tin tank stores.
- (b) Wardell Armstrong update report commissioned on wind energy generation potential on the County Farms Estate. In c.2009 Wardell Armstrong were commissioned by the County Council to model, as a desk top exercise, the wind energy potential of the County Farms Estate. Due to planning and viability constraints identified at the time, this exercise was somewhat restricted in its scope. Wardell Armstrong have been asked to update their report with some of those constraints removed.
- (c) The AgroRes project has also commissioned a discussion paper drafted by Exeter University exploring the potential viability of extracting heat for energy purposes from stored slurry.
- (d) A further AgroRes project has commissioned Exeter University to undertake energy consumption monitoring on a sample range of potentially high load farm businesses on the Estate. This research will hopefully inform the best renewable energy model options and what improved technology and equipment, potentially grant fundable under the small capital grant scheme, can be purchased to reduce energy consumption on the holdings.
- (e) County Farms Estate tenants have also been invited to attend three AgroRes funded webinars. The first event discussed onshore wind, solar panels and energy storage; the second explored the merits and viability of methane harvesting; and the third explored carbon sequestration in soils.

1.3 In the meantime, the Devon Climate Emergency Partners have published an Interim Devon Carbon Plan (December 2020) for consultation. Within the report, the County Farms Estate is referenced as a potential resource for leading on delivery of identified goals and outcomes.

- 1.4 In May 2019, a partnership was formed to respond to the climate and ecological emergency in Devon (including the areas of Plymouth and Torbay). Its members represent public bodies, private sector interests, environmental organisations and academic institutions.
 - 1.5 The Devon Climate Emergency partners invited a Net-Zero Task Force of fifteen specialists to create an evidence-led Devon Carbon Plan recommending a pathway to achieve net-zero emissions and the earliest credible date to do so. A separate body, the Climate Impacts Group, is producing a Devon, Cornwall and Isles of Scilly Adaptation Plan to help prepare communities to live in a warmer and more resilient world.
 - 1.6 What does Net-Zero Mean? ‘Net-zero’ emissions mean’s that “the total of active removals from the atmosphere offsets any remaining emissions from the rest of the economy”.
 - 1.7 For Devon to become net-zero, overall, the emissions produced and put into the atmosphere and the emissions removed must balance. Emissions can be removed from the atmosphere through initiatives such as improving soil health, protecting soils, planting trees, or restoring peat bogs, as soils and peat can lock in carbon and plants absorb carbon dioxide from the air. This is often termed ‘offsetting’.
 - 1.8 The Plan lays out a roadmap for Devon to achieve net-zero carbon by 2050 at the latest, with an interim target of 50% reduction by 2030 below 2010 levels.
 - 1.9 This is the link to the [Devon Carbon Plan](#).
 - 1.10 This Committee report however focusses on the findings of Chapter 11 – Food, Land and Sea, as this is the area where the County Farms Estate could be most engaged and arguably needs to lead the way in delivering the Carbon Plan objectives. Chapter 11 can be found in full at Appendix 1 of this report.
- 2.0 Chapter 11 – Food, Land and Sea
 - 2.1 Chapter 11 states Agriculture, Forestry and Other Land Use (AFOLU) emissions accounted for 17% of Devon’s total Greenhouse Gas (GHG) emissions in 2018. The main AFOLU emissions include: enteric fermentation in livestock (e.g. from cow’s digestion of grassfeed), the management of manures produced by livestock, the application of organic and inorganic fertilisers to land, changes in land cover and the cultivation of organic soils. This makes agriculture Devon’s third largest source of emissions, after buildings and transport. However, whilst this does account for the contribution of Devon’s terrestrial landscape in sequestering carbon dioxide, it does not account for the role of its marine habitats.
 - 2.2 The Chapter goes on to report on ‘what needs to happen?’. The conclusions drawn include:
 - (i) Maximise carbon sequestration and storage by natural carbon sinks: trees, peat and other wetland habitats and soils. To do so, establish a Land Use Framework, underpinned by a Nature Recovery Network, to promote coherent long-term land-use planning to meet our needs, nature recovery and climate change mitigation and adaptation.

- (ii) Establish funding mechanism for carbon sequestration and storage. Funding mechanisms considered include working with government on the Environmental Land Management Scheme, environmental net-gain initiatives and the development of carbon sequestration accreditation systems locally, as well as the creation of a Devon Carbon Investment platform.
- (iii) Reduce GHG emissions from farming practices and increase soil carbon by enabling farmers and land managers to have access to impartial advice to help them transition towards a mix of regenerative agriculture, agroforestry, pasture-based farming and making best use of farm wastes for energy purposes.
- (iv) Develop demand for and access to local, nutritious, sustainably produced food by: providing shared retail, processing and marketing resources for Devon's food producers; offering engagement programmes to empower people to engage with food and its production; and use the spending power of Devon's anchor institutions to support farming businesses to have a positive impact on the environment.

2.3 The transition to a net-zero agricultural system and land-use, provides numerous opportunities for Devon including:

- (i) Enhance Habitats: Storing more carbon will require the quality and extent of habitats across Devon to be improved. Habitats of particular importance in Devon that are extremely effective at storing carbon are: upland peat bogs; woodlands; wetland habitats such as reedbeds and valley mires; wet Culm grasslands;
- (ii) Increase Resilience: For example, appropriately located tree planting or improvements to soil carbon will reduce the rate that water moves through landscapes and therefore reduce the risk of flooding in villages, towns and cities.
- (iii) Improve our Health: Following the diet advocated by the government's Eatwell Guide;
- (iv) Revitalise Local Economies: Increasing people's engagement with food production, environmental standards and health benefits will raise demand for local, sustainable food.

3.0 The role of the County Farms Estate and its tenants

3.1 From experience and knowledge of Estate tenant's businesses, it is clear that much of the good practice 'proposed' by the report is already being implemented by our tenants. At many of the recent new entrant monitoring visits, the vast majority of our tenants are farming incredibly responsibly and have voluntarily adopted, for the benefit of carbon sinks and biodiversity, regenerative farming approaches such as:

- Rotational cropping
- Herbal lays and nitrogen fixing legume rich swards
- Minimum tillage operations
- Careful consideration of the impact of soil loss on slopes through appropriate and well-timed cultivations

- rotational and every other year hedge trimming
 - Hedgerow restoration and planting
 - prudent use of FYM and slurries to reduce dependence on inorganic fertilisers.
 - Mob and rotational grazing
 - Soil aeration and minimising compaction
- 3.2 Some of our tenants are already calculating their Carbon Footprint. Appendix 2 is an example of a Carbon footprint report. The report shows that compared to the benchmark figures our tenant is producing far less C0₂e than his industry peers which demonstrates yet again that the County Farms Estate tenants are at the cutting edge and leading the way with sustainable farming. It is perhaps important to note that these are commercial scale farm businesses and not micro part time units.
- 3.3 There are also a couple of scientific research ‘tests and trials’ taking place currently on the Estate that may well inform further developments in farming practices to reduce carbon emissions from farming and sequester more carbon without adversely affecting farm viability. We hope to be able to report on these tests and trials in the near future.
- 3.4 The responsible farming approach voluntarily adopted by the vast majority of our Estate tenants should be celebrated and applauded. However, there is always more that could be done and if the Estate is to achieve net zero by 2050, more will need to be done, which can only be delivered through funding and greater awareness and understanding following ongoing training and development.
- 3.5 As stated above, the County Farms Estate is already referenced in terms of potential deliverable opportunities for best practice demonstration but there are likely to be many more ways in which the Estate and its entrepreneurial, visionary and highly competent tenants can get involved.
- 4.0 Conclusion
- 4.1 That the resolutions made by this committee in February 2020 be reaffirmed and, subject to the requisite additional funding being secured, taken further to ensure the estate is at the forefront of delivering the goals and objectives of the Interim Devon Carbon Plan thus moving towards achieving net zero as soon as practicably possible.
- 5.0 Options/Alternatives
- 5.1 Alternative options have been considered and discounted as they are believed to either be contrary to current Estate policy and/or not in the best financial interests of the Estate.
- 6.0 Consultations/Representations/Technical Data
- 6.1 The views and opinions of the Devon Federation of Young Farmers Clubs and the Estate Tenants Association will be presented by the two co-opted members to the committee.

- 6.2 No other parties have been consulted and no other representations for or against the proposal have been received.
 - 6.3 The technical data is believed to be true and accurate.
- 7.0 Financial Considerations
- 7.1 The Author is aware that additional financial support will be required to deliver the recommendations of this report and the goals and objectives of the Interim Devon Carbon Plan 2020.
- 8.0 Environmental Impact Considerations (including Climate Change)
- 8.1 The Author considers that if additional funding can be secured and the recommendations set out herein can be delivered, a positive environmental outcome will be achieved and the estate will move closer to achieving net zero by 2050.
- 9.0 Equality Considerations
- 9.1 The Author is not aware of any equality issues arising from this report.
- 10.0 Legal Considerations
- 10.1 The Author is not aware of any legal issues arising from this report.
- 11.0 Risk Management Considerations
- 11.1 The Author is not aware of any obvious risks to manage.
- 12.0 Public Health Impact
- 12.1 The Author is not aware of any public health impact.
- 13.0 Summary/Conclusions/Reasons for Recommendations
- 13.1 The Author has prepared this report in accordance with the findings of the County Farms Estate Strategic Review (April 2010)

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Electoral Divisions: All

Local Government Act 1972: List of Background Papers:

None

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