RHONDDA CYNON TAF COUNTY BOROUGH COUNCIL

CABINET

28TH JANUARY 2021

RECOMMENDATIONS OF THE CLIMATE CHANGE CABINET STEERING GROUP

REPORT OF THE SERVICE DIRECTOR OF DEMOCRATIC SERVICES AND COMMUNICATION IN CONSULTATION WITH COUNCILLOR RHYS LEWIS (CLIMATE CHANGE CHAMPION)

1. PURPOSE OF THE REPORT

1.1 The purpose of the report is to provide the Cabinet with the recommendations of the Climate Change Cabinet Steering Group, which met on the 16th November 2020, to consider reports on Nature's Assets, the Strategic and Local Development Plans and Energy Generation.

2. RECOMMENDATIONS

It is recommended that the Cabinet:

2.1 Note the content of the three reports considered by the Climate Change Cabinet Steering Group on the 16th November 2020, which are attached to the report

2.2 Note the feedback and discussion of the Steering Group and;

2.3 Agree the recommendation of the Climate Change Cabinet Steering Group in respect of the Nature's Assets report:

I. That the Director, Corporate Estates and the Council's Ecologist undertake a review of the publicly owned land, to identify those sites which are most suitable for peatbog restoration and the cost implications; with a report presented back to the Steering Group for its consideration.

3. REASONS FOR RECOMMENDATIONS

3.1 To acknowledge the work of the Climate Change Cabinet Steering Group and its recommendations.

4. THE CLIMATE CHANGE CABINET STEERING GROUP

4.1 The Climate Change Cabinet Steering Group met on the 16th November 2020, where the following reports were considered:

4.2 NATURE'S ASSETS (APPENDIX 1)

The unique landscape and wildlife assets of Rhondda Cynon Taf means that the approach we adopt to the Climate and Nature emergencies should reflect these special circumstances. The Rhondda Cynon Taf landscape is rich in priority 'natural' habitats, undisturbed soils and peat bogs, all of which are important 'carbon stores'[4]. Members noted that the RCT population has one of the lowest ecological footprints in Wales (see appendix 1). The RCT area is also unusual in that a large area of the County Borough is in public ownership, including the Welsh Government forest estate as well as many Council owned sites, and large areas of green space associated with new developments. Therefore, in Rhondda Cynon Taf we have opportunities for natural solutions that are not available in other places.

Members acknowledged now fortunate RCT is to have a wealth of 'natural' carbon solutions due to its unique landscape, which is rich in undisturbed soils and peatbogs.

The Climate Change Cabinet Steering Group considered the report of the Director of Public Health, Protection and Community Services, which sought the Steering Group's feedback on issues relating to Nature's Assets and the climate and biodiversity emergencies. Members were provided with the proposed priorities for carbon storage, based on basic principles of the carbon cycle.

Members praised the officer for the informative report and acknowledged the plethora of biodiversity within RCT.

One Member was particularly interested in the natural regeneration of the woodland. The Member raised concerns in relation to the damage caused to tree saplings by mountain fires and questioned if there were mitigations in place to prevent it. The officer advised the Member of the 'Healthy Hillsides Project' approach, which ensures conservation management/conservation grazing in areas which are not subject to wildfire problems, in order to maintain fern whilst promoting wildflowers, wildlife and woodland regeneration.

Members agreed that education and support of the community was a priority. The Chair emphasised the importance of education and spoke of the high profile campaigns involving the fire service and police service, which sought to educate young people on the importance of the hillsides and its wildlife.

Members noted that the most effective way to increase carbon sequestration in RCT would be to restore the many degraded peatbog and associated heathland and marshy grassland habitats that occur on the relatively flat hilltops above the valleys. Following a lengthy discussion, Members felt it would be beneficial for a review to be undertaken by the Director, Corporate Estates and the Council's Ecologist to identify those sites which are most suitable for peatbog restoration on land owned by the Local Authority and NRW. The review would consist of identifying the priority areas and the cost implications, in order to

present a report back to the Steering Group of the findings for its consideration. The Chief Executive emphasised the importance of planning ahead, should Cabinet agree to set money aside within the Capital programme.

4.3 STRATEGIC AND LOCAL DEVELOPMENT PLANS - THEIR POLICIES AND COMMITMENTS TO ENSURING HOUSING, TRANSPORTATION AND BUSINESS INFRASTRUCTURE MINIMISES THE CARBON FOOTPRINT (APPENDIX 2)

Welsh Government have been committed to cutting emissions and transitioning to a low carbon economy for a number of years and in March 2019, published *Prosperity for All: A Low Carbon Wales*. The publication seeks to maximise wider benefits for Wales, ensuring a fairer, healthier and more equal society. The plan *pulls together 76 existing pieces of policy from across the Welsh Government, UK Government and the EU where decarbonisation is integrated either as a direct outcome or a wider benefit.* Some are new policy, such as the Renewable Energy Targets and improved policy in *Planning Policy Wales (Ed. 10)*, where decarbonisation is a central pillar.

The Steering Group considered the report of the Director, Prosperity and Development, which set out what the Strategic Development Plan (SDP) and the Revised Local Development Plan (LDP) are required to address with regards to policies and commitments to minimise our Carbon Footprint; and the opportunities that would present themselves during the preparation and formulation of these plans, (particularly from an LDP perspective), to expand upon these standard requirements from an RCT perspective.

The Steering Group noted that the LDP would act as the land use expression of the Council's aspirations, including climate change and carbon reduction, which ensures that key elements are allocated. It was noted that the priority Peatbogs restoration areas identified could be allocated within the revised LDP, following the recommendation made by Members in respect of the report on Nature's Assets.

Members noted that the LDP could act as a persuasive document for developers to consider eco-friendly options moving forward. It was also noted that the City Region had agreed funding for electrical vehicle charging points for taxi and transportation services in the first instance; and that officers were undertaking an exercise to look at Council car parks to consider any opportunities for charging points.

4.4 ENERGY GENERATION AND RELATED ISSUES (APPENDIX 3)

Rhondda Cynon Taf Council has a long-established programme of investing in Energy Generation measures and amidst other initiatives, this has included the installation of renewable Energy technology with over 100 Solar panel arrays being installed across both Schools and Corporate Buildings totalling 1.58 MW.

The officers outlined the Council's current energy strategies, the potential expansion of renewable energy ambitions and current renewable energy projects, including the following initiatives:

- The Taffs Well Thermal Spring Project – the project is currently underway and when completed will make use of renewable geo-thermal/underground energy using water from the River Taff.
- Support was previously provided for the development of a community micro-hydro scheme at Clydach.

Furthermore, the Steering Group noted that the Corporate Estates Energy team had been investigating the potential of using RCT-owned land for the development of major renewable Energy projects for both Wind and Solar generation, with the assistance of the Welsh Government Energy Service.

The Steering Group noted that a range of energy options had been explored, such as wind, solar and hydro energy. It was pleasing to note the various ambitious and positive energy generation initiatives such as the potential wind farn installations, the development of Taffs Well Thermal Spring, which would produce energy for the local school and hub and the development of an Eco Park on undeveloped land at Bryn Pica.

Members did questioned how the estimated Carbon Benefit of 2,323 Carbon Tonnes per annum had been calculated. Officers confirmed that the figure had been determined by a standard calculation process in conjunction with the Welsh Government Energy Service. The calculation had been comprised by focussing on the carbon savings in use for the generated energy only, based on investment and not the embedded carbon in delivering the project up to that point. The Director recognised that the embedded carbon would need to be considered if the Council were to claim that the project would be Net Zero in its own right.

The Steering Group welcomed the detailed update and looked forward to hearing of the progress at a future meeting.

5. LEGAL IMPLICATIONS *OR* LEGISLATION CONSIDERED

5.1 In respect of the Nature's Asset report, relevance is place on the Environment (Wales) Act 2016t. Part One covers the Sustainable Management of Natural Resources and includes the Biodiversity Duty (S6). This part also sets the context for policy and action for the Welsh Government and Natural Resources Wales. Part Two considers climate change and informs Welsh Government policy in this regard.

5.2 The proposals within the Local Development Plan report, would be considered through the preparation process of the statutory revision of the LDP.

6. EQUALITY AND DIVERSITY IMPLICATIONS

6.1 There are no equality or diversity implications as a result of the recommendations set out within the report.

7. CONSULTATION / INVOLVEMENT

7.1 There are no Consultation implications aligned to the report.

8. FINANCIAL IMPLICATION(S)

8.1 As the Nature's Assets report covers a number of new policy areas for the Council, there may be financial implications arising from future implementation. Some projects described, such as the 'Healthy Hillsides' and 'Lost Peatland' projects have already obtained grant funding. There are likely to be some short-term Welsh government capital grant opportunities for 2020/21, in particular relating to Green Infrastructure. Where no funding is currently available, the Cabinet may require additional information before considering whether and how these issues should be addressed.

8.2 It is considered that any financial implications from Strategic Local Development Plan report will be associated with the formulation of the required evidence base for the preparation of the Revised LDP.

8.3 In respect of the Energy Generation update, all existing 'live' projects are funded through relevant cost centres and an existing enabling budget so there are no further financial implications aligned to the report.

9. LINKS TO THE CORPORATE AND NATIONAL PRIORITIES AND THE WELL-BEING OF FUTURE GENERATIONS ACT

9.1 The discussion of Natures' Assets contributes to the Council's priority to 'build a sustainable County Borough' as set out in the Council's Corporate Plan 2016-2020. It will contribute to the discussions about the next Corporate Plan for the period 2020 to 2024, which is likely to contain further consideration of the Climate and Biodiversity Emergencies.

9.2 Consideration of Natures Assets must reflect the five ways of working in the Well-being of Future Generations Act. In particular, this must be a long-term consideration, focused on preventative and precautionary action. It will contribute specifically to the Resilience and Global Responsibility goals of the Act, but in the longer term it could have implications for all the goals.

9.3 Preparation of the revised LDP will embrace the principles of the Corporate Plan, along with the wellbeing goals and five ways of working as identified within the WBFG Act. The revised LDP will also be guided by the aims and objectives set forth in the Cwm Taf Well-being Plan 2018-2023 entitled Our Cwm Taf. The revised plan will also be influenced by the cultural, economic, environmental and social well-being goals and objectives within Our Cwm Taf, where they relate to land-use planning.

10. CONCLUSION

10.1 The Climate Change Cabinet Steering Group has set out an ambitious programme to enable the Council to make progress towards achieving the 2030 target.

10.2 On the 16th November 2020, the Climate Change Cabinet Steering Group met to consider reports on Nature's Assets, the Strategic and Local Development Plans and Energy Generation.

10.3 The Climate Change Cabinet Steering Group recommends Cabinet consideration consider supporting the content of the above reports.

LOCAL GOVERNMENT ACT 1972

AS AMENDED BY

THE LOCAL GOVERNMENT (ACCESS TO INFORMATION) ACT 1985

RHONDDA CYNON TAF COUNTY BOROUGH COUNCIL

CABINET

28TH JANUARY 2021

RECOMMENDATIONS OF THE CLIMATE CHANGE CABINET STEERING GROUP

REPORT OF THE SERVICE DIRECTOR OF DEMOCRATIC SERVICES AND COMMUNICATION IN CONSULTATION WITH COUNCILLOR RHYS LEWIS (CLIMATE CHANGE CHAMPION)

RHONDDA CYNON TAF COUNTY BOROUGH COUNCIL

CLIMATE CHANGE CABINET STEERING GROUP

16TH NOVEMBER 2020

NATURE'S ASSETS

JOINT REPORT OF THE DIRECTOR PUBLIC HEALTH, PROTECTION & COMMUNITY SERVICES AND THE GROUP DIRECTOR PROSPERITY, DEVELOPMENT & FRONTLINE SERVICES IN DISCUSSION WITH THE CABINET'S CLIMATE CHANGE CHAMPION (COUNCILLOR RHYS LEWIS)

Authors: Elizabeth Dean, Environment Planner – 01443 562242
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1. PURPOSE OF THE REPORT

1.1 The purpose of the report is to consult the Steering Group on issues relating to Nature's Assets and the climate and biodiversity emergencies.

2. RECOMMENDATIONS

It is recommended that the Steering Group:

2.1 Comment on the issues raised in this report, and

2.2 That the feedback and comments of the Climate Change Cabinet Steering Group are reported to Cabinet for their consideration.

3. REASONS FOR RECOMMENDATIONS

3.1 To enable the committee to consider the opportunities to maximise carbon storage through the natural assets in Rhondda Cynon Taf and advise the Cabinet accordingly. The issues raised could have implications for future Council policy, priorities and expenditure.

4. BACKGROUND

4.1 The landscape and wildlife of the South Wales Valleys are unique in Southern Britain, boasting a huge diversity of habitats and species occurring in close proximity and accessible to a large urban population. The biodiversity rich landscapes of Rhondda Cynon Taf lie at the centre of these riches, greatly valued by local people and a fundamental part of our shared sense of culture, place and community[1], [2].

4.2 'Action for Nature' is the Plan to protect and enhance the wildlife and biodiversity of Rhondda Cynon Taf. It was initially developed in the late 1990's, by a partnership of local people and organisations who had an interest, passion and knowledge of local wildlife. The first plan was published in 2000 and it was reviewed by the Partnership in 2009. The Plan is being reviewed again in the light of new legislation and changing circumstances. The Partnership continues to be passionate and has continued to evolve, regularly welcoming new participants. Individuals, community groups, specialist wildlife organisations (like Butterfly Conservation), local specialist groups (e.g. Glamorgan Fungi Group, The Coal Spoil Initiative), Natural Resources Wales and the Wildlife Trust for South and West Wales are well represented.

4.3 Keep Wales Tidy has provided a long-term link with local community groups, many of whom take an active part in the partnership and in practical projects. Recent grant funding from Welsh Government to the Welsh Council for Voluntary Action (WCVA) has provided a 1.5 day a week post for the Partnership in RCT until March 2023. The grant aims to extend the Partnership to include other public bodies like the health sector, business and the wider voluntary sector. Working with Interlink[3], the community voluntary council for RCT, will be an important part of this project.

4.4 **A Rhondda Cynon Taf Strategy for Nature's Assets**

4.4.1 The unique landscape and wildlife assets of Rhondda Cynon Taf means that the approach we adopt to the Climate and Nature emergencies should reflect these special circumstances. The Rhondda Cynon Taf landscape is rich in priority 'natural' habitats, undisturbed soils and peat bogs, all of which are important 'carbon stores'[4]. We are lucky to have such a wealth of 'natural' carbon solutions. Across much of the British landscape, these were lost to the intensive land management practices of the recent past. In addition, the RCT population has one of the lowest ecological footprints in Wales (see appendix 1). The RCT area is also unusual in that a large area of the County Borough is in public ownership, including the Welsh Government forest estate as well as many Council owned sites, and large areas of green space associated with new developments. Therefore, in Rhondda Cynon Taf we have opportunities for natural solutions that are not available in other places.

4.4.2 Measuring carbon storage and the way carbon and methane (a more powerful but shorter-lived greenhouse gas) move through the environment is extremely complex, and is the subject of much on-going research and investigation. However, the proposed priorities for carbon storage, based on basic principles of the carbon cycle (see appendix 2) provide an established framework for action.

- Protect existing carbon stores through conservation of our wealth of semi-natural habitats and undisturbed soils;
- Restore degraded peatbog and associated habitats;
- Promote an expansion of urban green infrastructure;

- Encourage the expansion of native woodland by natural regeneration;
- Integrate carbon storage solution with conservation and recognition of our existing biodiversity, landscapes and cultural assets.

4.5 The following sections explore how these priorities can be built into the Council's work.

4.6 **Existing carbon stores**

4.6.1 More than 70% of Rhondda Cynon Taf is countryside and this is already storing a large amount of carbon. Undisturbed soil, especially soils with a high organic matter content with well-established natural or semi-natural vegetation cover (which includes not just woodland, but old grasslands, heaths, wetlands, bogs and the valleyside ffridd) provides a stable carbon store for the long term. These complex habitat mosaics also hold a huge part of the richness of RCT's native biodiversity. We have huge areas of priority habitat and most of our agricultural land is permanent pasture. Losses of this carbon will occur when ground is ploughed (e.g. for crops or to reseed grass) or if the ground is built over for houses, roads, commercial development etc. Protecting those soils from disturbance is a key action; even tree planting can release stored soil carbon.

4.6.2. How land is managed can also affect stored carbon. Removing soil or vegetation (including timber), wild fire, soil compaction and soil erosion all reduce stored carbon. Re-wetting peaty soils (which contain a lot of carbon locked up in organic material), conserving natural priority habitats, allowing (where appropriate) natural regeneration and natural processes all promote carbon sequestration.

4.6.3 The Local Development Plan plays a significant role in directing development to appropriate sites minimising the impact on the wider countryside. The draft National Development Framework published by Welsh Government for consultation in 2019 aims to focus new development in existing settlements. Welsh Government is also promoting the energy hierarchy that prioritises demand reduction, energy conservation and renewable energy sources over fossil fuel extraction (coal and gas).

4.7 **Peatbog restoration**

4.7.1 The most effective way to increase carbon sequestration in RCT would be to restore the many degraded peatbog and associated heathland and marshy grassland habitats that occur on the relatively flat hilltops above the valleys. Where anaerobic (oxygen free) wet conditions can be restored, the actively accumulating peatbogs and waterlogged wetlands that develop are very effective as carbon stores. The sphagnum mosses that form the peat in peatbogs grows slowly, but the carbon and biomass they accumulate in their lives is stored when they die and form peat, and is kept from release back to the atmosphere. Ancient peat bogs still safely store carbon originally captured from the atmosphere thousands of years ago. Conversely, peatbogs that are

degrading may be releasing carbon into the atmosphere contributing to global warming.

4.7.2 The Pen-y-Cymoedd windfarm will provide a 25-year landscape scale demonstration project of how to successfully restore a very large area of peatbog and associated habitats which lies between and around the turbines. £3m from the developers will contribute towards removal of conifer trees, blocking ditches, habitat management and monitoring the impact as part of the planning consent. The Heritage Fund has recently announced funding for the Lost Peatlands project to extend the scope and involve local communities in the restoration. Other benefits from the peatbog restoration include increased water storage in the uplands, potentially reducing flood risk in urban areas downstream and reducing wild fire risk in dry summers. In additional, peatbogs are an internationally rare habitat for which the UK and Wales have a global duty to protect. As our own version of the rain forests, restoring our peat bogs will benefit a unique range of mosses, plants and animals that depend upon them. There are at least 6 other long-term peat bog restoration schemes in RCT linked to green energy planning permissions. Something in excess of 700 hectares of peat bog restoration is achievable in this way. In addition, Natural Resources Wales (NRW) are also undertaking two peatbog restoration projects on the forest estate in Rhondda Cynon Taf at Mynydd Ton and Castell Nos. There is huge potential to undertake more of this work and an urgency to commence this in areas where the current forestry is leading to significant degradation of the remnant peatlands[4].

4.8 **Urban Green Infrastructure**

4.8.1 Inevitably, carbon storage opportunities are more restricted in urban areas but net gains are more likely to be achieved. Urban greening, often called 'Green Infrastructure' can offer multiple benefits to residents (aesthetics, air quality, play space, reduced flooding, active travel etc.) as well as storing carbon. Managing urban green infrastructure to maintain stored carbon and the other benefits will also be important and some of the challenges this poses are considered in s4.13 below.

4.8.2 Rhondda Cynon Taf has some of the highest urban tree canopy cover in Wales (RCT average 18.5% in 2013, Wales 16.3%) but surveys by NRW show that we are losing larger trees from the Victorian and Edwardian era[5]. Some built up areas have lower levels of tree cover (e.g. Brynna/ Llanharan is below 10%) and these should be the priority for expanding cover. In addition, many of our Parks and Cemeteries have aging tree populations, and developing a new urban tree-scape for the twenty-first century will provide multiple benefits. Green Infrastructure to store carbon may not be restricted to trees. Green roofs and walls, gardens, grass playing fields and pitches all contribute. The Wildflower Grassland Management Policy is a recent example of the Council's work in this area where reduced grass cutting and biodiversity enhancement for wildflowers and insects provides additional environmental and social benefits. The biggest net gains for carbon sequestration will be made where soil and growing plants can replace hard surfaces for the long term.

4.8.3 Green/ Blue Infrastructure has a role in reducing flood risk in towns. Rain gardens, porous surfaces and sustainable drainage systems all contribute. This is the key driver behind the introduction of Schedule 3 of the Flood and Water management Act 2010 which requires all new construction work over 100m2 to require SuDs approval prior to the commencement on site with a view of managing the local flood risk whilst ensuring the naturalisation in the urban and rural environments. The requirement also addresses the enhancement of water quality, amenity, biodiversity and future maintenance of green/ blue infrastructure to ensure future generations can benefit from the development. The website has information related to RCT's Sustainable Drainage Approving Body (SAB).[6] A number of schemes for increasing tree cover in Parks and Cemeteries and for surface water management have been recently submitted for grant funding. Grant funding from schemes such as 'Local Places for Nature' and 'Greening Public Estates' provides opportunities to use our local parks and cemeteries as a first step towards urban tree planting thus enabling local communities to benefit directly by improving the urban landscape on their doorstep.

4.8.4 Again, the new LDP will provide opportunities to promote Green Infrastructure, as this is a new feature of Welsh Government planning guidance (PPW10) published in 2018.

4.9 Expansion of native woodland by natural regeneration

4.9.1 Both the UK and Welsh government have priorities for increasing tree cover to sequester more carbon. Finding ways to meet these targets without damaging our existing mosaics of rich biodiversity (and carbon storing) habitats will be challenging if we only consider tree planting as a solution. Rhondda Cynon Taff already has a much higher level of tree cover (about 33%) than other parts of Wales or the UK. Because of the extent and diversity of semi-natural habitat in Rhondda Cynon Taf, planting trees in the countryside for carbon sequestration may not be appropriate in many circumstances. In addition, woodland cover has naturally expanded significantly over the past fifty or more years and is likely to continue to expand due to the processes of natural regeneration. In RCT low intensity land management and our wonderful warm, wet climate provide idea conditions for native trees to naturally seed and grow.

4.9.2 Natural regeneration results in 'the right tree in the right place' more so than planting. The trees that develop are from the local seedbank and are better adapted to local conditions. Regeneration avoids introducing tree diseases, requires no plastic tubes or stakes and no fertiliser, herbicides, pesticides, watering or strimming and it is free! As woodland cover develops, natural regeneration create an important succession of wildlife rich habitats from tall grass through to scrub and then woodland. Although initially a little slower, natural regeneration quickly catches up and can over-take growth of planted trees. Ultimately, natural regeneration realises woodland cover every bit as quickly as that achieved by tree planting. [7, 8, 9, 10, 11]

4.9.3 Some areas of Council owned land are let for commercial grazing, but much of it is in conservation management, with minimal intervention to natural processes. Appropriate management of Council estate is however important if we wish to preserve and conserve the whole range of our flora and fauna. Therefore, conservation grazing and biodiversity grass management are key biodiversity actions. However, the low intensity management of conservation grazing often encourages tree growth around the edges of sites, and conservation grass cutting areas often include areas, which regenerate to tree cover. Indeed, the Healthy Hillsides project is a good example of this. Initial pilots in Rhondda Cynon Taf are now being extended with funding from Welsh Government grant. Working in collaboration with Natural Resources Wales, the Fire Service, the Wildlife Trust and many others, the project aims to bring sites at risk of wildfire into management, typically using conservation grazing. Once the risk of fire is removed, woodland cover will significantly increase as part of the resulting patchwork of managed habitats.

4.9.4 Managing coal spoil tips to maintain public safety and biodiversity value, in particular for pollinators is another challenge. Bare ground and open flower-rich habitats are required for many of the insects (including a wealth of pollinators) that make these habitats so special, as well as for their unique lichen and fungi communities. Colliery spoil sites (including many of the 1970s and 80s reclaimed sites) are proving to be biodiversity hot spots with habitat and species assemblages that are unique to South Wales. Planting trees on colliery spoil may seem to offer opportunities to increase tree cover, but in doing so habitats of extremely high biodiversity and immense cultural value may be lost. In addition, until tips have aged sufficiently to develop deep enough soils, tree planting will require intensive ground preparation and importation of growing material; both of which will involve an associated carbon footprint, biodiversity loss and potential source of erosion. Tips do eventually start to naturally scrub over and develop woodland, but only when they have equally naturally developed soils capable of doing so. Managing scrub to retain some open ground is now becoming an important management consideration on some of our oldest and rarest remaining Victorian and Edwardian Tips[12].

4.9.5 The proposed changes to public funding for the agriculture industry, post Brexit, are likely to see potential for increased woodland cover in RCT. It would be encouraging if ‘natural regeneration’ options were available to farmers in appropriate locations such as RCT. It is also hoped that any future schemes ensure that there is full recognition of the multiple benefits and value of the existing natural and semi-natural habitats within our landscapes.

4.9.6 Commercial forestry, where tree planting is designed to produce a crop that is removed, does not increase carbon sequestration. The aim is to balance tree removal with replacement over the life of the crop. For a given land area, carbon sequestration is likely to be slightly negative due to the periodic impacts of repeated soil disturbance, drainage and operational inputs. This can still be beneficial where the timber is used as a replacement for more carbon-intensive materials, such as coal, bricks or plastic.

4.10 The water environment

4.10.1 The water environment is critically important for biodiversity and is another of 'natures assets' likely to be affected by climate change. Flood risk is one of the main areas for consideration.

4.10.2 In the 2018 UK climate impact programme, the revised projections highlighted the increasing risk of flooding developing as a result of climate change. These new projections for flood risk will be reflected in Welsh Government's draft 'National strategy for flood and coastal erosion risk management in Wales', due for publication in 2020 and are recognised in the outline for the new RCT corporate plan.

4.10.3 The restoration of upland peatbogs for carbon sequestration could also help to mitigate increased storm frequency and potentially higher rainfall by storing more water in the uplands. More generally, flood risk can be mitigated by changes to land management in catchments upstream of 'at risk' communities, often called Natural Flood Risk Management (NFM). The Healthy Hillsides project will contribute towards NFM in some places and potentially, aspects of Welsh Government proposals for future agriculture support may contribute.

4.10.4 The Council produces a Flood Risk Management Strategy[13] and this promotes NFM in appropriate locations. An example of a Rhondda Cynon Taf led project is at Cwmaman[14]. Natural Resources Wales have a pilot project at Cwmparc with the introduction of woody dams into the stream to slow the flow in addition to the peatbog restoration projects mentioned above.

4.11 Air Quality

4.11.1 An earlier report has outlined the causes and impacts of poor air quality in Rhondda Cynon Taf. It should be remembered that the natural world is affected by air pollution as well as people. For example, vehicle exhausts (in particular nitrogen dioxide) affects soils and contributes to detrimental changes in local biodiversity. This is not well understood. The only detailed investigation in RCT relates to European protected sites near the heads of the Valleys road. The use of Green Infrastructure to ameliorate air pollution is not straight forward and much bigger impacts will result from reductions in vehicle emissions. Using Green Infrastructure to promote and encourage active travel as a substitute for car journeys will contribute to improving air quality. The earlier Air Quality report (appendix table c) included examples of Green Infrastructure to tackle specific issues.

4.12 Landscape Strategy linking nature conservation and people

4.12.1 Rhondda Cynon Taf is a fantastic treasure trove of landscapes, habitats, flora and fauna. A biodiversity that has a rich cultural basis and is strongly tied to the complex geology and geomorphology of the County Borough. RCT is also a place with many expert, self-taught naturalists, local historians, and environmentally concerned and active people and groups. In RCT people and communities live within and surrounded by wildlife-rich habitats (the backdrop to our daily lives) and for everyone in RCT nature is only a short walk or stroll from their door step. An initiative that is currently being developed aims to link people and groups into a network of biodiversity rich sites, and to engage with people to visit, enjoy, record, and help to manage these sites to maximise their biodiversity and promote active communities. By developing a 'landscape scale' project, large scale funding such as the Heritage Lottery might be attracted. Initial discussions between Council staff, the Wildlife Trust, Butterfly Conservation and number of local groups has established support for the idea.

4.12.2 Through the implementation of its planning function, the Council has secured a significant network of ecological mitigation sites across the County Borough. Some of these sites are Council adopted and have land management funding associated (from S106 agreements), while others are developer or management company owned but have specific S106 biodiversity management commitments and requirements. There is also a network of Council-owned and managed countryside and parks sites, cemeteries and land reclamation sites, together with partnership owned nature reserves and Community Council sites. When viewed on a map these commitments and opportunities form a network of often closely adjacent sites, linking communities with the wider countryside. It is a very significant resource of both wildlife-rich habitats and an amazing opportunity for people to become actively involved in helping to look after, care for, understand and interpret their own environment. We already have community groups with interest in a specific site who would welcome the opportunity to share expertise and volunteers with similar groups both locally and across RCT. In addition, there is a network of local people with a keen interest in engaging in both their local patch and the 'bigger picture'. Therefore a priority 'Action for Nature' action is the development in 2020/21 of a pilot 'living landscape project' within RCT. If successful, this would see a major new approach to biodiversity conservation and community engagement in RCT with long-term sustainability and continued biodiversity improvement.

4.13 Challenges

4.13.1 Some of the opportunities to promote Nature's Assets in the Council's response to Climate Change have been listed above. New legal duties and a higher profile for the Climate and Biodiversity emergencies provide major opportunities to move this agenda forward. These welcome opportunities come after a protracted period of funding difficulties for all public bodies. To realise these new opportunities consideration needs to be given to staffing numbers, expertise and revenue funding, and the need to build capacity in

local authorities, Non-Government Organisations (NGOs), the specialist voluntary sector, NRW and Welsh Government. Close partnership working will be very important.

4.13.2 Current capacity will limit policy development, practical management works and engagement with the public and schools. The Biodiversity Duty (reported in Nov) has resulted in a welcome increase in the attention paid to ecology across Council services, but this poses challenges when the staff resource (1 ecologist) remains the same. The new sustainable drainage law and the new requirement for biodiversity enhancement by planning applicants are typical of increasing demand for the ecologist's input.

4.13.3 If the Council and its partners are to take forward this important agenda and develop some of the initiatives identified in this report, there will be a need to build resources, expertise and create additional capacity in both the Council and other partner organisations.

4.13.4 The Council will explore the potential for a Graduate Officer post to work with the ecologist and there may be opportunities for additional Apprentice roles to undertake work on countryside and grassland management. There are currently proposals to support an apprentice on tree management work and an increase in the revenue budget for tree works. The Council may also wish to consider additional resources to increase training and to support the mapping and data sets required to support the living landscape pilot, providing evidence of natural regeneration.

4.13.5 There is demand for increased support for environmental education, particularly in schools in Rhondda Cynon Taf. A graduate post, shared between Education and Streetcare is planned to work specifically with secondary schools. Similar provision to support education for sustainable development and global citizenship in primary schools may also be required.

4.13.6 Natural Resources Wales have a limited environmental education resource, which supports a network of Outdoor Learning Groups (including one for RCT and Merthyr) and Keep Wales Tidy promote Eco-Schools, in which many RCT schools participate. The RCT Education and Inclusion Services are currently developing a pilot project of up to seven schools that aims to enhance school grounds to promote biodiversity and outdoor learning.

4.13.7 In taking forward any recommendations arising from the recommendations of the steering group, the Council will need to quantify and consider the necessary resource implications.

5. EQUALITY AND DIVERSITY IMPLICATIONS

5.1 There are no equality or diversity implications as a result of the recommendations set out in the report.

6. CONSULTATION / INVOLVEMENT

6.1 This report explores issues, some of which have been discussed by the Local Biodiversity Action Plan partnership and specifically with Natural Resources Wales.

6.2 The views of this Steering Group will make an important contribution and inform the deliberations of Cabinet

7. FINANCIAL IMPLICATION(S)

7.1 As this report covers a number of new policy areas for the Council, there may be financial implications arising from future implementation. Some projects described, such as the 'Healthy Hillsides' and 'Lost Peatland' projects have already obtained grant funding. There are likely to be some short-term Welsh government capital grant opportunities for 2020/21, in particular relating to Green Infrastructure. Where no funding is currently available, the Cabinet may require additional information before considering whether and how these issues should be addressed.

8. LEGAL IMPLICATIONS *OR* LEGISLATION CONSIDERED

8.1 The Environment (Wales) Act 2016 is relevant. Part One covers the Sustainable Management of Natural Resources and includes the Biodiversity Duty (S6). This part also sets the context for policy and action for the Welsh Government and Natural Resources Wales. Part Two considers climate change and informs Welsh Government policy in this regard.

9. LINKS TO THE CORPORATE AND NATIONAL PRIORITIES AND THE WELL-BEING OF FUTURE GENERATIONS ACT.

9.1 The discussion of Natures' Assets contributes to the Council's priority to 'build a sustainable County Borough' as set out in the Council's Corporate Plan 2016-2020. It will contribute to the discussions about the next Corporate Plan for the period 2020 to 2024, which is likely to contain further consideration of the Climate and Biodiversity Emergencies.

9.2 Consideration of Natures Assets must reflect the five ways of working in the Well-being of Future Generations Act. In particular, this must be a long-term consideration, focused on preventative and precautionary action. It will contribute specifically to the Resilience and Global Responsibility goals of the Act, but in the longer term it could have implications for all the goals.

10. CONCLUSION

10.1 Members of the Climate Control Cabinet Steering Group are requested to consider the information presented in this report and provide their observations to Cabinet.

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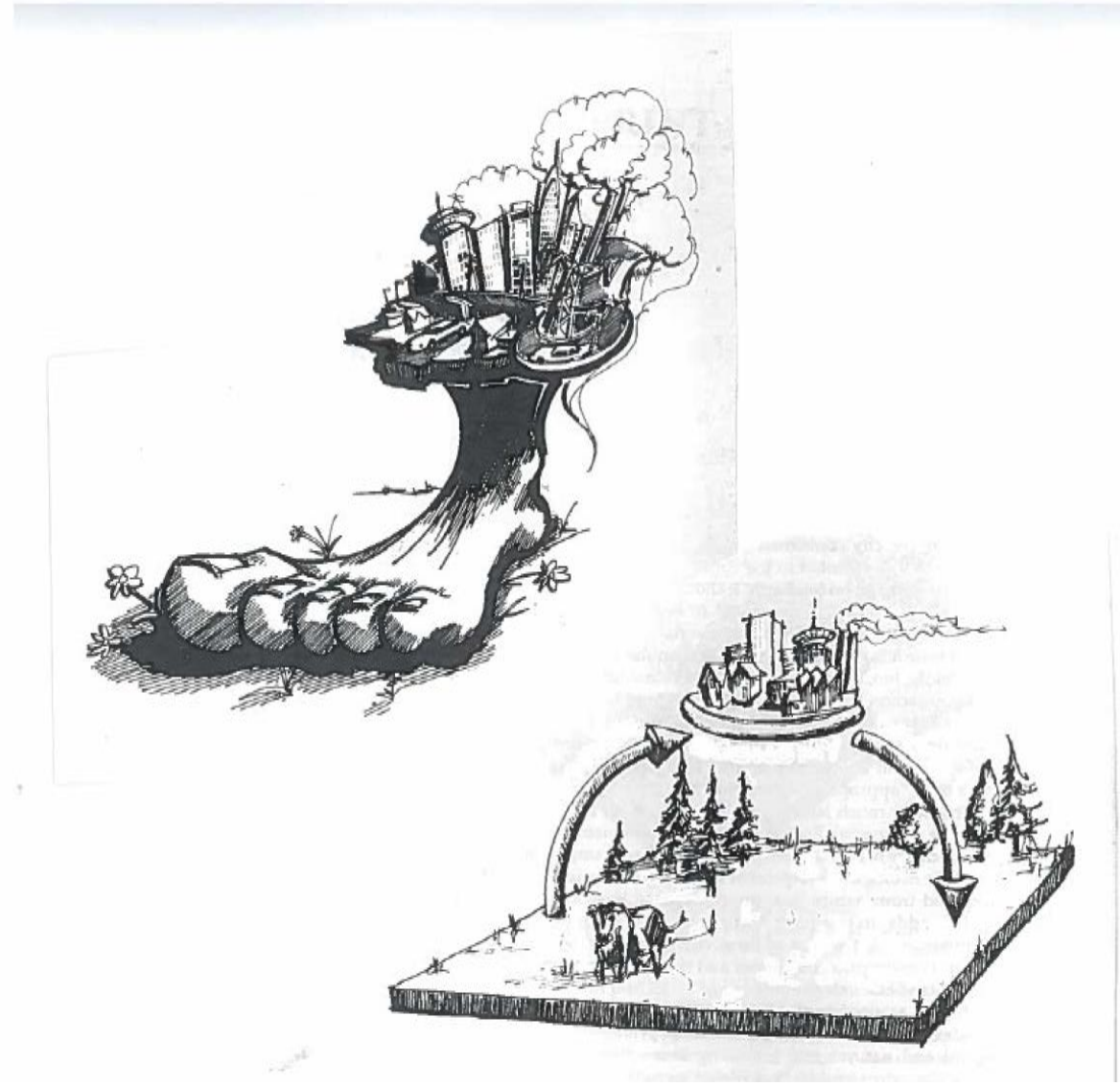
Appendix one: Ecological Footprint



‘What is an ecological footprint?
Think of an economy as having an ‘industrial metabolism’. In this respect, it is similar to a cow in its pasture. The economy needs to ‘eat’ resources, and eventually, all this intake becomes waste and has to leave the organism- the economy-again. So the question becomes: how big a pasture is necessary to support that economy – to produce all its feed and absorb all its waste? Alternatively, how much land would be necessary to support a defined economy sustainably at its current material standard of living?’

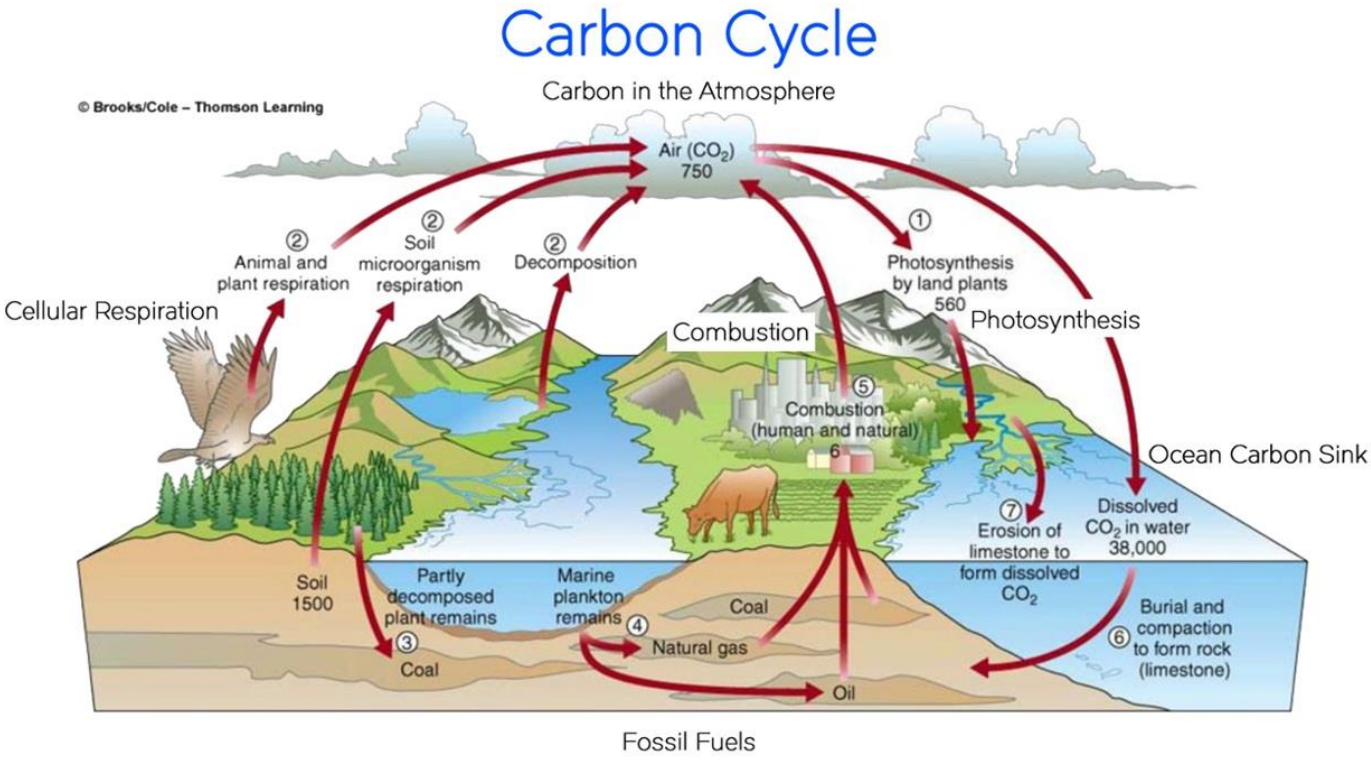
Our Ecological Footprint: Reducing Human Impact on the Earth: Mathis Wackernagel and William Rees

https://gov.wales/sites/default/files/publications/2019-04/ecological-and-carbon-footprint-of-wales-report.pdf

A more recent illustration is provided by Mike Berners Lee in the book ‘There is no Planet B’. He calculates the travel miles possible using energy from a square metre of Californian land that is used for solar panels or growing wheat or willow grass.

	Miles per square metre per year
Electric Bike (PV)	21,243
Electric train (passenger miles, PV)	4033
Nissan leaf electric car (PV)	1081
Tesla electric car (PV)	927
Bike (bread powered)	45
Walking (bread power)	22
Airbus A380 (passenger miles biofuel from cellulose)	12
Biodiesel trail (passenger miles, wheat powered)	5
Biofuel car (willow powered)	5
Horse riding (wheat fed horse)	3
Biofuel car (wheat powered)	1

Appendix Two: The Carbon Cycle and carbon storage



From http://www.thinglink.com/scene/979054305975730178

Primo Levi's autobiography of short stories '**The Periodic Table'** includes 'Carbon' as the final story.
https://transitionnetwork.org/sites/www.transitionnetwork.org/files/CarbonStoryByPrimoLevi.pdf

Carbon stock average estimates by broad habitat

Habitats	**Carbon stock in soils (t Cha^{-1})**	**Carbon stock in vegetation (t Cha^{-1})**
Dwarf shrub Heath	88	2
Acid grassland	87	1
Fen, mash and swamp	76	?
Bog	74	2
Coniferous woodland	70	70
Broad leaf,	63	70
Neutral grassland	60	1
Improved grasslands	59	1
Arable and horticulture	43	1
Coastal margins (UK)	48	?

From Natural England Research Report NERR043

RHONDDA CYNON TAF COUNTY BOROUGH COUNCIL

CLIMATE CHANGE CABINET STEERING GROUP

16TH NOVEMBER 2020

STRATEGIC AND LOCAL DEVELOPMENT PLANS - THEIR POLICIES AND COMMITMENTS TO ENSURING HOUSING, TRANSPORTATION AND BUSINESS INFRASTRUCTURE MINIMISES THE CARBON FOOTPRINT

REPORT OF THE DIRECTOR OF PROSPERITY AND DEVELOPMENT

Author: Owen Jones, Development Services Manager – Planning Policy

1. PURPOSE OF THE REPORT

1.1 The purpose of the report is to firstly set out what the Strategic Development Plan (SDP) and the Revised Local Development Plan (LDP), are required to address with regards to policies and commitments to minimise our Carbon Footprint.

1.2 Secondly, the report will set out the opportunities that will present themselves during the preparation and formulation of these plans, (particularly from an LDP perspective), to expand upon these standard requirements from an RCT perspective.

2. RECOMMENDATIONS

It is recommended that the Climate Change Cabinet Steering Group:

2.1 Comment on the issues raised in this report, and in particular the discussion points set out in paragraphs 6.9 to 6.15

2.2 That the feedback and comments of the Steering Group are reported to Cabinet for their consideration.

3 REASONS FOR RECOMMENDATIONS

3.1 The considerations in the report are those that need to be developed further as part of the Climate Change responsibilities and aspirations of Rhondda Cynon Taf, whilst they also need to be incorporated into the statutory revision process for the Revised LDP .

4. BACKGROUND

4.1 Rhondda Cynon Taf agreed on the 27th of November 2019 to progress with the preparation of a Revised LDP for the County Borough. This is to be further agreed by Welsh Government (WG), to formally begin the 3.5 year preparation process to its adoption at the end of 2023. Due to the coronavirus pandemic, it was not possible to begin the preparation of the Revised LDP in June as agreed, with an alternative starting date currently being considered. As an authority, we have also agreed on 31st July 2019, to be part of the preparation, the governance arrangements and contribute financially to the Cardiff Capital Region SDP. To date, 8 of the 10 authorities in the region have also agreed to this.

4.2 If an SDP is not forthcoming in the shorter term, then the LDP will be required to take on board more strategic consideration of climate change and its associated planning policy. If the SDP is forthcoming, then they will be included in either as appropriate. Accordingly, this paper will continue, unless stated otherwise, on a basis of what is required within an LDP and then what we as an authority can propose to have included within our LDP.

5. What is required in an LDP in relation to Climate Change and its Carbon Footprint

5.1 There is a significant amount of policy and legislative requirements within the planning system, and in particular the preparation of statutory Plans (SDP's/LDP'S), by both the Welsh and UK Governments in relation to Climate Change and our Carbon Footprint, the main elements of which are discussed below.

5.2 Legislation

5.3 In June 2019, the Committee on Climate Change (CCC) requested that the Welsh, Scottish and UK Government reassess the UK's long-term emissions targets following the publication of its paper *Net Zero – the UK's Contribution to Global Warming* in May 2019. In response, Wales accepted the CCC's recommendation for a 95% reduction in greenhouse gas emissions by 2050 and committed to go further with an ambition to reach 'net zero' by 2050. Given that all countries of the UK supported this, the Climate Change Act 2008 introduced an associated target amendment order in June 2019.

5.4 The Environment (Wales) Act 2016 also required Welsh Government (WG) to set new interim emission reduction targets by the end of 2018. Such interim targets relate to 2020, 2030 and 2040 and should be published c. two years prior to the interim date. WG are committed to reducing emissions by 40% by 2020 (below 1990 levels) however this target was also set out in their Climate Change Strategy (2010).

5.5 WG have been committed to cutting emissions and transitioning to a low carbon economy for a number of years and in March 2019, published *Prosperity for All: A Low Carbon Wales*. The publication seeks to maximise wider benefits for Wales, ensuring a fairer, healthier and more equal society. The plan *pulls together 76 existing pieces of policy from across the Welsh Government, UK Government and the EU where decarbonisation is integrated either as a direct outcome or a wider benefit.* Some are new policy, such as the Renewable Energy Targets and improved policy in *Planning Policy Wales (Ed. 10)*, where decarbonisation is a central pillar.

5.6 The ambitions also stem from the Well-being of Future Generations (Wales) Act's seven well-being goals and five ways of working. The strategy also highlights the role the National Development Framework (which is the development plan prepared by WG for all of Wales) needs to play in driving sustainable growth and combating climate change by guiding strategic development over the next 20 years.

5.7 <u>National Development Framework</u>

5.8 The Draft National Development Framework (NDF), released in August 2019, also has tackling the causes and mitigating the effects of climate change as a key consideration. Climate change is specifically mentioned in the NDF section on '*Challenges and Opportunities*'. The plan acknowledges that climate change and the decline of biodiversity are global challenges that are the biggest issues faced by Wales. It states that *Addressing this is our greatest responsibility when considering the legacy we will leave for future generations and as a consequence we have declared a Climate Emergency* (Welsh Government, 2019, p15).

5.9 The NDF commits to decarbonising Wales, delivering healthy, resilient eco-systems, encouraging sustainable energy generation, responsible water resource management, contributing the success of the circular economy, seeking the production of zero carbon homes and encouraging sustainable travel.

5.10 Any replacement LDP will need to reflect these targets in its vision, strategy, objectives and policies. This will be achieved by developing robust evidence in order to ensure that it can contribute to tackling climate change in a meaningful way. It will need to be ensured however that any prospective allocations are viable and deliverable, with any proposed new requirements for low or zero carbon homes and contributions to CIL/S106.

5.11 Planning Policy Wales

5.12 Planning Policy Wales (PPW) (Edition 10, December 2018) is then the key overarching planning policy document in Wales, giving policy for decision making at a national level, whilst also indicating what policy principles should be cascaded down into LDP, local level policy. PPW 10 advocates making the best use of resources, which is one of its 'key planning principles'. The policy recognises that the planning system has a vital role to play in making development resilient to climate change, decarbonising society and developing the circular economy for the benefit of both the built and natural environment and to contribute to the well-being goals.

5.13 PPW encourages that the 'proximity principle' is applied to ensure that problems are solved locally and are not passed on to other places or future generations. It has a focus on strategic placemaking, using a spatial strategy to locate development to promote sustainable development. This includes minimising the need to travel through the location of housing, services and employment. Additionally, PPW10 has introduced the Sustainable Transport Hierarchy, which Welsh Government require must be used to determine applications and when preparing an LDP. It prioritises walking, cycling and public transport ahead of private motor vehicles, though it does recognise that electric vehicles also play an important role in sustainable transport.

5.14 Additionally, it promotes more sustainable travel choices, network management and demand management in order to increase physical activity, improve health and help to tackle the causes of climate change and airborne pollution. Paragraph 5.3 'Transportation Infrastructure' states that the planning system should facilitate the delivery, decarbonisation and improvement of transport infrastructure in a way that reduces travel and the use of private vehicles. At 5.3.6 planning authorities must promote and facilitate the provision and decarbonisation of high quality public transport infrastructure.

5.15 Section 5.7 also seeks to ensure that all new development mitigates the causes of climate change in accordance with the energy hierarchy for planning. *Reducing energy demand and increasing energy efficiency, through the location and design of new development, will assist in meeting energy demand with renewable and low carbon sources. This is particularly important in supporting the electrification of energy use, such as the growing use of electric vehicles* (p89)*.*

5.16 Paragraph 5.8 'Renewable and Low Carbon Energy' sets out that planning authorities should facilitate all forms of renewable and low carbon energy development. In doing so, planning authorities should seek to ensure their area's full potential for renewable and low carbon energy generation is maximised and renewable energy targets are

achieved. This would include the re-powering, Life Extension, Decommissioning and Remediation of the infrastructure.

5.17 Paragraph 4.1.39 encourages the use of Ultra Low Emission Vehicles (ULEVs), and the support of the provision of ULEV charging points as part of new development. Where car parking is provided for new non-residential development, planning authorities should seek a minimum of 10% of car parking spaces to have ULEV charging points. Paragraph 4.1.42 Planning authorities should take a strategic approach to ULEV charging in their area and, where appropriate, develop policies in their development plan and specify local requirements.

5.18 The Council will need to take account of these and other policies expressed throughout Planning Policy Wales and ensure that it is translated (without repetition) down to the local level where appropriate.

6. Revising the Rhondda Cynon Taf LDP

6.1 Revised LDP Preparation

6.2 The current RCT LDP (2011-2021) seeks to contain development within settlements and to identify appropriate new urban growth sites where required. Policies aim to reduce the need to travel by providing sites for employment and services as well as housing and promoting regeneration in sustainable locations. Planning policy also seeks to ensure high standards of amenity in all new developments as well as promoting active travel. This minimises damaging land-use change, which could affect carbon storage in soils, vegetation and trees.

6.3 Whilst climate change is not a 'new' challenge, the way in which it is tackled does put many authorities into 'unchartered waters'. Whilst legislation, policy and guidance in Wales and all over the UK is heavily focused on tackling the causes of climate change, in reality, there are very few proposed solutions. As such, Rhondda Cynon Taf will need to be creative in responding to the challenges of climate change whilst still bringing forth viable development.

6.4 The preparation of the Revised LDP over the next 3 years will be just that – a revision of the current Plan. This will identify the necessary growth of development up to 2030. However, all elements of the Plan will need to be fully re-evaluated through the official preparatory stages from Visioning (including the identification of aims and objectives), Preferred Strategy and then the Deposit (Draft) Plan. Each of these stages will need to ensure that the progressive and current climate change legislation and associated planning policy, as discussed above, are appropriately addressed

6.5 It is through these preparatory stages that all stakeholders can propose how we take forward the Climate Change and Carbon Neutral associated aims and proposals, beyond the current planning policy standard requirements. The vision, aims and objectives of the plan may influence an amended LDP Preferred Strategy in the first instance, with more emphasis on the climate change agenda, more so than perhaps existing sustainable development growth.

6.6 Policies can then be prepared and formulated that give local distinctiveness and aspirations to Climate Change, albeit ensuring that they are led by clear evidence for need and realistic deliverability. Similarly, the identification of suitable sites for allocation for the necessary land uses e.g. housing, employment, retail, leisure etc follow nationally prescribed and our own bespoke standards. This is in relation to the amount, type and in particular, their location.

6.7 A series of groups will be involved in the preparation of the Revised LDP, including community councils, community groups, the public, key consultees such as NRW, Cadw, Coal Authority etc, private developers and commercial bodies amongst others.

6.8 All Elected Members will be given their opportunity to have a say on the LDP at various stages, and we are currently in the process of creating a specific RCT Members Forum through the Overview and Scrutiny Committee, to make a formal contribution to the preparation stages of the Plan. It may be appropriate that members from this group propose to sit on this Forum, or otherwise ensure close consultation between the two. The group itself can contribute at various stages as appropriate through consultation events and stages.

6.9 **Considerations for the LDP for the Climate Change Group to Contribute To**

6.10 Throughout the forthcoming early preparatory stages of the Revised LDP, there are a number of areas/topics that can be researched further with regards to their relationship with Climate Change and Carbon Reduction; and ultimately considered for inclusion within it. Some questions that the group could consider further at this point include:

- What percentage of car parking spaces should have charging points in new non-residential developments?
- Should there be a similar policy for new residential developments?
- Should all new homes in RCT be built as zero carbon?
- What is the role of RCTs uplands in combating Climate Change
- What is the group's view on the density of development around Metro nodes and car free policies on new development?

6.11 *What percentage of car parking spaces should have charging points in new non-residential developments?*
National policy suggests a requirement for new non-residential development to seek a minimum of 10% of car parking spaces to have ULEV (electric) charging points. There is nothing to prevent the Council from being more ambitious in this area and formulating higher standards. However, it should be emphasised that any policies proposed will need to be based on robust evidence and will need to be measureable in terms of implementation/success and be commercially deliverable.

6.12 *Should there be a similar policy for new residential developments?*
Why shouldn't all new homes be provided with at least one dedicated outdoor, weather proof electric vehicle charging point? Cost is one issue that needs further investigation as the viability of house building in some parts of RCT is already marginal but that's not to say the starting position in the LDP is to seek to achieve such a policy. Consideration needs to be given to whether any technicalities are specified in the policy given that technologies can change rapidly over time. Consideration also needs to be given to the level of charging points in communal parking spaces.

6.13 *Should all new homes in RCT be built as zero carbon?*
Although building control standards are currently being considered by Welsh Government, there may be further opportunity to seek that new homes are built towards zero carbon or at least a performance above the current building regulations. It is important to consider what should the definition of zero carbon be in the LDP insofar as it relates to new homes?

- Does it apply only to 'regulated energy' - those fixed and integral services and fittings in the home such as the space heating, hot water, ventilation and lighting - or also to 'unregulated energy' including things a developer can't as easily control such as those used through plug-in appliances and cooking?

- Does it relate to just a home's day-to-day operational energy use or to life-cycle carbon emissions, including that embedded in its construction?

- Does it apply to each home individually, or development-wide (or by phase for larger schemes), whereby some homes may not need to meet the standard, if the development as a whole does?

- Does it include or exclude potential off-setting arrangements where the homes themselves might not be zero carbon, but offset payments have

been made (for example into a fund to allow the Council to improve energy efficiency in older housing stock)?

Zero carbon might refer to all or any of these but its meaning will have implications for the form of development and its viability.

6.14 *What is the role of RCTs uplands in combating Climate Change*
Historically, development plans such as the LDP have focussed on managing development in and around urban areas with little more than a presumption against development in areas such as the uplands of RCT. However, more consideration will need to be given to the value of these areas and the role they can play. For example, our upland peat bogs have a significant role in carbon storage but also a potential role in managing water storage for flood prevention - are these roles mutually exclusive? The upland areas have significant potential to support wind and solar energy development but these developments along with their associated infrastructure have the potential to compromise the hydrology of the peat bog ecosystem. The intrinsic quality of our uplands has the potential to support a significant increase in the tourism economy in RCT so what considerations will the LDP need to balance the benefits to the local economy from increased development and visitors in the uplands alongside the potential detrimental impacts this could have on the environment.

6.15 *What is the group's view on the density of development around Metro nodes and car free policies on new development?*
The LDP will certainly need to take into consideration the Cardiff Capital Region City Deal Metro and electrification of the South Wales Central Valley Line. Not only should this improve air quality from current rolling stock, but we must also capitalise on this investment. All opportunities should be sought to identify land for development around these public transport nodes. Furthermore, these are often located within existing urban centres. However, the density of development in towns has long been a point of contention in the determination of planning applications with space standards and the level of off street parking in particular being regular reasons for refusal of applications for new flats and apartments. The views of the group on how the LDP should balance these issues would be welcome.

6.16 Listed in Appendix 1 of this report, below, are summaries of Plans and Policies of other Local Authorities relating to this Climate Change and carbon reduction agenda. As this Appendix indicates, there are relatively few examples across the UK of such good practice, although it is not so say that this list is an exhaustive one.

7 EQUALITY AND DIVERSITY IMPLICATIONS

7.1 There are no equality or diversity implications as a result of the recommendations set out in the report.

8 CONSULTATION / INVOLVEMENT

8.1 The views of this Steering Group will make an important contribution and inform the deliberations of Cabinet, whilst also informing the preparatory and consultation stages of the revision of the LDP.

9 FINANCIAL IMPLICATION(S)

9.1 It is considered that any financial implications from this report will be associated with the formulation of the required evidence base for the preparation of the Revised LDP.

10 LEGAL IMPLICATIONS *OR* LEGISLATION CONSIDERED

10.1 The proposals will be considered through the preparation process of the statutory revision of the LDP.

11 LINKS TO THE CORPORATE AND NATIONAL PRIORITIES AND THE WELL-BEING OF FUTURE GENERATIONS ACT.

11.1 Preparation of the revised LDP will embrace the principles of the Corporate Plan, along with the wellbeing goals and five ways of working as identified within the WBFG *Act*. The revised LDP will also be guided by the aims and objectives set forth in the Cwm Taf Well-being Plan 2018-2023 entitled Our Cwm Taf. The revised plan will also be influenced by the cultural, economic, environmental and social well-being goals and objectives within Our Cwm Taf, where they relate to land-use planning.

12 CONCLUSION

12.1 Members of the Climate Control Cabinet Steering Group are requested to consider the information presented in this report and provide their observations to Cabinet.

Appendix 1 – Examples of other Authority's Plans and Policies.

Swansea Local Development Plan

Swansea Council adopted the Local Development Plan (LDP) for their area in February 2019, and forms the statutory development plan for Swansea Council. It promotes a placemaking agenda and the WG well-being objectives. Some policies contained within the LDP specifically make reference to decarbonisation or carbon neutral ambitions, as detailed below;

- Chapter 1 – Plan Strategy details greater resilience needs to build into energy supply, and energy efficiency needs to be promoted as a means of supporting decarbonisation. Locally identified energy infrastructure and renewable energy generation to help meet carbon reduction requirements, such as Swansea Bay tidal lagoon.
- Strategic Objectives 6 – Encourage appropriate development of low carbon and renewable energy resources and energy infrastructure.
- Policy PS 2 Placemaking and Place Management includes criteria that developments should: "*Maximise opportunities for sustainable construction, resource efficiency and contributions towards increased renewable or low carbon energy generation"*
- Policy SD 2 Masterplanning Principles includes development should *"integrate opportunities where appropriate to minimise carbon emissions associated with the heating, cooling and power systems for new development"*
- Policy ER 1 Climate Change includes development proposals should take into "*reducing carbon emissions"* and "*promoting energy and resource efficiency and increasing the supply of renewable and low carbon energy".* The policy expands to say a reduction in carbon emissions will be achieved by means of controlling the energy demand associated with development through maximising energy efficiency. Secondly, sustainable sources of energy should be incorporated, without reliance on fossil fuels. Information about carbon sinks acting as a means of off-setting carbon emissions by natural means.
- Policy EU 1 Renewable and Low Carbon Energy Proposal sets out the criteria for low carbon energy development.
- Policy EU 2 Renewable and Low Carbon Energy Technology in New Development. Development will be required to maximise the contribution of renewable or low carbon energy technology to meet the energy demands of the proposal, particularly for Significant Energy Consuming Developments.

Swansea Council operate Ultra Low Emissions Vehicles for their public sector fleet.

Merthyr Tydfil LDP

Key issues identified as part of the LDP include the quality and energy efficiency of the existing housing.

Home energy use is the primary cause of local Green House Gas emissions. Carbon budgeting is set to drive demand for renewable and low carbon energy.

The LDP makes clear that the plan can't deliver all local wellbeing outcomes, as many issues extend beyond 'land-use planning' influences. However, the LDP contributes to creating the right conditions to support their delivery.

LDP Objective 6: 'Sustainable Design' To promote high quality, sustainable and inclusive design and support measures which mitigate the predicted effects of climate change. The plan objectives will help deliver on the vision, and have been identified with regard to local issues raised through consultation.

LDP Objective 7 Transport: To support an integrated transport system, promote active travel and ensure new developments are accessible by walking, cycling and public transport links.

LDP Objective 16 Renewable Energy: To promote renewable and low carbon energy.

Renewable energy presents an opportunity to reduce carbon emissions and generate income. The Plan has been informed by a Renewable Energy Assessment (2017) that has identified areas of opportunity. Contributing towards renewable energy generation is supported by the Plan through the inclusion of positive policies for renewable energy and the identification of Heat Priority Areas, where opportunities for district heating could be exploited, and Local Search Areas for solar energy. A local contribution target towards renewable energy production is also included in the Plan's monitoring framework.

Joint Transport Plan for South West Wales

New technologies for electric vehicles could lead to a step change in connectivity and function and form of transport networks. Swansea and Carmarthenshire authority areas have introduced electric vehicles fleet for council use. Scheme proposals to implement a network of electric vehicle charging points across South West Wales.

London Borough of Merton – Case Study

In 2003, Merton introduced a planning policy that required all new build

developments to generate 10% of their electricity from on-site renewable sources. This has been adopted further across the UK and is known as the ‘Merton Rule’.

The local plan includes sustainability standards, such as an overarching policy that sets out “new development should be designed to minimise emissions arising throughout their lifetime”. The plan also includes a Policy EP H6 Environmental Protection which sets out how proposals must contribute to improving air quality and applicants must investigate the feasibility of CHP and district heating schemes.

Climate change and energy performance is detailed as information that should be provided in support of planning applications to Merton Council. An energy strategy should be provided for each site that demonstrates environmental improvements.

Merton Council declared a Climate Emergency, and is in the process of developing a Climate Change Action Plan for the council area. The council has also previously produced a Climate Change Strategy and Action Plan 2014-2017 that sets out how the council intends to tackle climate change. The strategy includes areas such as energy, planning and development, sustainable resources and the natural environment.

RHONDDA CYNON TAF COUNTY BOROUGH COUNCIL

CLIMATE CHANGE CABINET STEERING GROUP
UPDATE REPORT

30th SEPTEMBER 2020

CORPORATE ESTATES UPDATE REPORT ON ENERGY GENERATION AND RELATED ISSUES

REPORT OF THE DIRECTOR OF CORPORATE ESTATES IN DISCUSSION WITH THE CABINET'S CLIMATE CHANGE CHAMPION (COUNCILLOR RHYS LEWIS)

Author(s): David Powell, Director of Corporate Estates and Steve Lock, Head of Energy Project Management.

1. PURPOSE OF THE REPORT

1.1 The purpose of the report is to provide an update relating to the position of the work of the Climate Change Cabinet Steering Group up to 30/09/20. Following the suspension of various Council meetings as a result of the Flooding and Coronavirus situations, the Climate Change Cabinet Steering Group has not met since January 2020 and this update report provides details of the current situation with regards to the work underway on the development of renewable energy projects and certain other related issues.

2. RECOMMENDATIONS

It is recommended that Members;

2.1 Note the contents of this update report as part of the ongoing work of the Climate Change Cabinet Steering Group.

2.2 Agree to continue with ongoing discussions with third parties with a view to maximising the energy generation subject to the final Welsh Government carbon footprint calculator.

2.3 Receive a further report in early 2021 providing a further update on progress.

3. REASONS FOR RECOMMENDATIONS

3.1 The contents of this report provides background information and update on the current situation with regards to the issues covered by the Climate Change Cabinet Steering Group. It provides an update on the proposals for the Council to build and finance potential solar and wind schemes on Council or other public sector owned land that will make a significant contribution to the Council achieving its Carbon Neutral target. It also provides an update on some other areas which have relevance for the development of the renewable energy projects.

4. CURRENT ENERGY GENERATION STRATEGIES

4.1 Rhondda Cynon Taf Council has a long-established programme of investing in Energy Generation measures and this has included the installation of renewable Energy technology with over 100 Solar panel arrays being installed across both Schools and Corporate Buildings totalling 1.58 MW.

4.2. In addition to the investment in Solar energy above there has also been progress on other initiatives;

- The Taffs Well Thermal Spring Project is currently underway and when completed will make use of renewable geo-thermal/underground energy using water from the River Taff.
- Support was previously provided for the development of a community micro-hydro scheme at Clydach.

4.3 The Carbon Reduction Programme (formerly known as the Invest to Save Programme) for Financial Year 2020/21 has been approved to invest around £1.2m on energy and carbon reduction improvements, subject to resources being available. Furthermore, a list of other potential energy efficiency projects with longer viability periods has also been developed for further consideration and possible additional investment.

5. CURRENT RENEWABLE ENERGY PROJECTS SITUATION

5.1 The Corporate Estates Energy team has recently been investigating the potential of using RCT-owned land for the development of major renewable Energy projects for both Wind and Solar generation, with the assistance of the Welsh Government Energy Service. These are projects which would be primarily developed by Rhondda Cynon Taf Council and as such would both contribute to the increase in the renewable energy provision and carbon reduction in the area and also make a positive economic contribution to the financial situation of the County Borough which could then be invested in further related improvements or other services for the benefit of citizens.

5.2 As the first stage of this process a number of sites across RCT were appraised with regards to the various aspects of their viability. As a result of this process a number of sites were not taken forward to the next stage which involved a more in depth appraisal and detailed discussions with the electricity network provider Western Power Distribution and other interested third parties.

5.3 The projects which proceeded to the next stage of the process of evaluating the technical, financial and carbon reduction viability were;

- Project 1 - A 9 MW wind farm installation
- Project 2 - A 9 MW wind farm installation
- Project 3 - A 3 MW wind farm installation
- Project 4 - A 6 MW solar farm installation

For these four projects various information has been obtained from Western Power Distribution (WPD) and further site analysis conducted. Each of them has been considered on both an RCT-only basis and also on a potential collaboration basis with third party organisations.

5.4 For the Wind farm installations referred to in projects 1 & 2, discussions have also been held with National Resources Wales (NRW) with regards to the possibility of a joint development of larger wind farms and preferably with RCT Council taking the lead role via an arrangement to lease the relevant land from NRW to develop larger facilities. Prior to the last few months these discussions had not developed strongly but recent changes in NRW have led to more positive discussions about the viability of a direct relationship with RCT Council rather than the lesser option of access over NRW land (and therefore developing Wind turbines on current RCT land only). These outline discussions with NRW are expected to progress to an 'agreement in principle' on the nature of the future relationship during the coming period with a clear picture of the technical and financial options for these two Wind farm sites.

There are several different scenarios for Projects 1 and 2 of the Wind farm projects both for RCT development only and for a combined RCT & NRW land development. If we are successful with NRW negotiations, the projects could increase from 9 MW to 16.45 and 15 MW projects respectively. However, these would require significantly more investment but would almost double the energy generation which could significantly offset our carbon footprint for energy consumption across our built asset portfolio.

Outline details of the various options for Projects 1 and 2 including the estimated development cost options, carbon benefits and related

financial payback periods are given in Appendix 1. For example the largest RCT and NRW land combined option for both sites is for 31MW of Wind Power with 12 wind turbines (7 at Project 1 site and 5 at Project 2 site) and this option would also generate an estimated Carbon Benefit of 25,739 Carbon Tonnes per annum.

5.5 For the Wind farm Project 3 (currently based on a single 3 MW wind turbine) this was not initially progressed to the same level of investigative detail as the other two Wind Farm sites due to the Grid connection issues and the lesser scale of generation potential. However, further discussions have progressed with a third party which owns the adjacent private wind farm. These had focused primarily on building a single RCT Turbine next to the adjacent site but the third party have recently suggested some other options regarding potential partnerships on the site (including RCT investment) and these discussions are ongoing to fully understand the implications and viability.

Outline details of the estimated development cost options and related financial payback periods are also given in Appendix 1. For illustrative purposes the development of a single 3MW RCT turbine on the land adjacent to the third party site would also generate an estimated Carbon Benefit of 2,323 Carbon Tonnes per annum.

5.6 For the Project 4 Solar Farm project there were substantial discussions with a potential third party partner whereby they would be supplied directly by a Private Wire arrangement. When these discussions were ceased by the potential third party it was then agreed that work on the Solar Farm option would proceed on an RCT only basis. This is continuing and a formal Grid connection application has recently been made to Western Power for a 5MW connection.

Outline details of the estimated development cost options and related financial payback periods are given in Appendix 1. For illustrative purposes the development of a 6 MW Solar Farm (with a 5 MW grid connection) on the Project 4 site would generate an estimated Carbon Benefit of 1,706 Carbon Tonnes per annum.

5.7 As part of the ongoing preparations, Ecology study work has already been commissioned for the projects and has commenced for the Project 4 Solar Farm site and is being extended to Project sites 1 and 2. This work can also be extended to the Project 3 site if the discussions with the third party progress satisfactorily.

5.8 A budget of £80K is available from existing resources to fund various investigations and necessary work to enable a report to be drafted with further details. This report will include data regarding the optimum size of the installations, the energy outputs, the carbon reductions and financial information for capital expenditure, capital funding and revenue income generated.

6. POTENTIAL EXPANSION OF RENEWABLE ENERGY AMBITIONS

6.1 Further work is also scheduled to look at those sites previously identified on the first stage list of RCT sites for Wind or Solar renewable generation but which were not progressed at that time to the next stage of the analysis. The work will include whether the sites could be made viable by the addition of other land on a purchase, lease or partnership basis and will be informed by the current liaison process with Western Power and the ARUP report on the electricity network in Rhondda Cynon Taf which is expected to be received in early October. This work was scoped just prior to the Flooding and Coronavirus situations and as such has been delayed but is due recommence shortly.

6.2 The feasibility of installing Solar generating car ports at RCT sites has also been examined with the specific possibility of a first installation trial at a Leisure Centre subject to the outcome of a feasibility study. A case study has been scoped and the larger of the two options has an estimated cost of circa. £528K based on a payback period of 16.8 years and could generate 241,158kWh of renewable Solar Energy with a dedicated 'Private Wire' connection to the Leisure Centre. A feasibility study for this project has recently been prepared for final consideration.

6.3 The potential of Battery storage and usage options will also be considered as part of the wider examination of technologies. We are specifically looking at the potential inclusion of battery storage as part of several larger roof top solar projects such as Rhondda Sports Centre and Ty Elai as part of the Carbon Reduction Programme referred to in paragraph 4.3 above. However the progression will be partially dependent on the costs at the design stage.

6.4 The potential of Hydrogen for fuel cells and vehicles is also being considered. Several meetings have taken place with Welsh Government about potential Hydrogen networks but costs are prohibitively high at this stage.

6.5 The Taffs Well Thermal Spring project is well underway and both Planning permission and Natural Resources Wales approval have recently been received. Tenders have also been received and whilst the project costs were higher than originally estimated a process of design refinement has been undertaken which has reduced the cost. The current anticipated project cost is £326k. Completion is scheduled to be by March 2021 to coincide with the original end date of the Renewable Heat Incentive scheme (it has recently been extended for projects commenced by December 2020 but we are still awaiting full details of the revised conditions).

6.6 The potential of the various water resources within RCT is also currently being investigated and discussions regarding the future potential using Minewater have been held with Bridgend Council who have a large project already underway (which is largely externally financed). Other water/hydro projects which were previously regarded as not being viable many years ago could also be re-examined but this would probably require an external resource to undertake the work.

7. RENEWABLE ENERGY PROJECTS SITUATION AT AMGEN CYMRU

7.1 Amgen Cymru is a private limited company wholly owned by RCT Council. The Company delivers waste transport, treatment, recycling and disposal services to the Council and other customers within South East Wales. To date their main involvement in renewable energy production has come from the generation of electricity from Landfill Gas. This is a Biogas rich in Methane which is produced as a result of the breakdown of biodegradable waste within a landfill. This is considered to be a form of renewable energy and has historically qualified for the Renewable Obligation subsidy.

7.2 The power generation scheme at Bryn Pica has operated since 2003 and has continued to contribute towards the replacement of regional electrical demand from fossil fuel sources. At its peak, the scheme exported 1.9 MW/hr of electrical energy, however the diversion of biodegradable waste from landfill in accordance with EU and regional government policy has resulted in a diminishing resource going forward. Current export rates are around 0.8 MW/hr and this is predicted to drop to 0.6 MW/hr by 2027.

7.3 Estimates indicate that 1.2 – 1.4 MWs of redundant export capacity exists at Bryn Pica. In terms of potential future renewable schemes, this is an asset which the Company is keen to utilise and is currently working through technical and contractual complexities in this respect. This could

facilitate reasonably rapid deployment of solar, wind or other generating technology commercially viable at that scale.

7.4 The Company also has a much smaller landfill generating station at the Nant-y-Gwyddon Landfill Site (closed in 2001). This is currently producing around 0.05 MW/hr. Previously power generation at the site peaked at 0.65 MW/hr and as such there is redundant export capacity at the site. Recent work done on the local electricity network has indicated that an export connection of 0.8 MWs could be provided at the site, with relatively minor expenditure. Amgen have been mindful of this benefit and has investigated the deployment of both wind and solar generation at the site.

7.5 Discussions with 'Infinite Renewables' regarding the development and operation of a single wind turbine have progressed through Aug-20. Amgen Officers have meet with the developers to review civil engineering works required at the site in order to facilitate the construction work. RCT Corporate Estates are in the process of reviewing the land title and Amgen lease with a view to offering a 20 year operating lease to the wind developer. Consideration has been given to the best form of such an agreement and it is proposed that RCTCBC will contract / lease directly with the wind developer and receive rental payments directly.

7.6 The Bryn Pica Facility is also home to the Tomorrows Valley Food Waste Treatment Plant, owned and operated by a private contractor, BioGen (Bryn Pica) Ltd. This facility operates using the Anaerobic Digestion technology and recycles separately collected food waste from RCT, Merthyr and Newport council. The AD Plant at Bryn Pica generates and exports electrical electricity with a capacity of circa 1 MW/hr. In addition, the plant produces large volumes of waste heat a significant proportion of which is not currently being utilised for any beneficial purpose.

7.7 In accordance with central government and regional government policy, Amgen has outlined a scheme for the potential utilisation of waste heat generated at the Bryn Pica facility. The potential carbon offsetting benefits of community and commercial / industrial heat networks has been clearly documented and can form part of the solution to reducing carbon emission. However, the technical and economic challenges of connecting heat producers to consumers has resulted in significant underdevelopment of heat networks within Wales and the UK in general. Working with the Council and Welsh Government Amgen are facilitating the development of an Eco Park on an area of undeveloped land at Bryn Pica.

7.8 At the point of development this small industrial park will target commercial tenants operating within the sustainability sector (waste, recycling and energy sustainability), particularly those that can gain benefits from the use of waste heat and renewable electrical energy. The scheme has generated much interest to date and has been supported through outline development and site preparation by Welsh Government funding. Detailed design is currently ongoing and the project team is considering funding options for full build out costs.

8. OTHER ISSUES AND DEVELOPMENTS RELEVANT TO THE CURRENT RENEWABLE ENERGY SITUATION

8.1 Western Power Distribution Update

RCT Council has had regular contact with Western Power Distribution (WPD) over many years but this contact has extended since the exercise to look at potential Renewable Energy project began in 2018. More recently, in April 2020 we were contacted directly by WPD via the Chief Executive explaining how WPD wishes to *'engage with all the Local Authorities within Wales in respect of energy planning to achieve the Government's target of Net Zero carbon emissions by 2050'*. This is related to the changing role of WPD in the next few years from a DNO Distribution Network Operator to a DSO Distribution Systems Operator. This will have substantial implications for their role in the overall electricity marketplace and as part of this they will have a more proactive role in managing local generation up into the network as well as their traditional role of managing large scale generation down through the network to users.

As part of the process RCT has provided a considerable amount of information to WPD. The discussions with WPD have been very positive and there are firm plans for an ongoing dialogue process to provide mutual information and assistance. The first of these follow up meetings took place in July and also included a slot for ARUP. As part of this meeting WPD confirmed their commitment to ongoing dialogue and to provide ARUP with certain information that they would need to compile their report on the Energy network in the RCT Council area. (see 8.2 below). It was also agreed that the next meeting between RCT and WPD will take place once the ARUP report on the RCT Energy network has been finalised and received.

8.2 ARUP Update

Following consideration of the ongoing Energy network information requirements and the existing RCT resource, ARUP consultancy have

been appointed to carry out a specific study of the Energy network in RCT, including its constraints, topography and opportunities. ARUP recently carried out a similar Wales–wide study for Welsh Government but it lacked specific information for RCT. This RCT specific study will follow similar principles but with an RCT level of granularity. The process is ongoing (including the joint meeting with WPD, and the information provided by, WPD to ARUP as referenced above in paragraph 8.1) and the report is expected in early October. This relationship should also offer RCT the facility to use this specialist additional resource as necessary such as to assist with a new review of Water/Hydro opportunities within RCT.

8.3 Welsh Government Energy issues update

As part of the wider RCT Renewable Energy and Carbon neutral strategy there is an ongoing and useful relationship with the various aspects of the Welsh Government Energy Service (WGES). They have provided significant assistance at various stages of the Renewable Projects and RCT has also recently completed an application for further WGES assistance with a project to examine and identify the potential and costs of RCT moving to an Electric Vehicle Fleet option (known as ULEV).

The other current Welsh Government issue is the ongoing lack of final clarity on the Carbon Footprint calculator guidance and what criteria will be applied to which activities public sector bodies in Wales will be able to claim as being 'Carbon beneficial'. The position is still being finalised by Welsh Government but the initial indication at this stage was that we may only be able to 'claim' Renewable Energy that is directly used. This stance would have significant implications and formal representations about our concerns have already been made to Welsh Government (as have some other Local Authorities).

8.4 Cardiff Capital Region Energy Strategy

As part of the ongoing work of the Cardiff Capital Region City Deal team they have recently produced a Regional Energy Strategy. The overall objective of this strategy is to outline and develop a strategic pathway identifying key interventions to deliver on the Capital Region's ambitions for decarbonising its Energy systems in order to meet Welsh Government targets, and to be on track for Net Zero by 2050.

The content of the report was outlined by the City Deal team on a 30th September meeting call to largely Energy-related staff across the City Region. With the support of the Welsh Government Energy Service they will be instituting a programme of briefings and information to the

10 Local Authorities before formally presenting the Strategy to the Cardiff City Region Cabinet meeting in December 2020.

9. EQUALITY AND DIVERSITY IMPLICATIONS

9.1 An Equality Impact Assessment is not required with regard to this report.

10. CONSULTATION

10.1 There are no consultation requirements at present with regards to this supporting report.

11. FINANCIAL IMPLICATION(S)

11.1 All existing 'live' projects are funded through relevant cost centres and an existing enabling budget so there are no further financial implications aligned to this interim report.

12. LEGAL IMPLICATIONS

12.1 There are no legal implications aligned to this report

13. LINKS TO THE CORPORATE AND NATIONAL PRIORITIES AND THE WELL-BEING OF FUTURE GENERATIONS ACT.

13.1 The purpose of the report is to provide an update relating to the work of the Climate Change Cabinet Steering Group with regards to the work underway on the development of renewable energy projects and certain other related issues.

The future actions that arise as a result of the future recommendations of the Climate Change Cabinet Steering Group report will be considered by the Council's Cabinet and it will take full regard to the seven national wellbeing goals.

14. CONCLUSION

14.1 This update report provides information relating to the work of the Climate Change Cabinet Steering Group meeting with regards to the work underway on the development of renewable energy projects and certain other related issues.

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Appendix 1 – Potential Energy Generation Projects

Appendix 1 – Energy Generation, Carbon Savings and Indicative Financial Information

Project		Annual Energy Generation (MW Hours)	Annual Carbon Reduction (Tonnes)	Total Capital Investment (£M)	Total Revenue Costs (£M)	Total Income from Energy Generation (£M)	Net Revenue Position (-Surplus/ +Deficit) (£M)
1a	9MW Wind farm RCT only	21,374	6,515	15.406	29.804	(29.011)	0.793
1b	16MW Wind farm RCT & NRW	47,717	14,545	25.094	53.535	(64.766)	(11.231)
2a	9MW Wind farm RCT Only	22,033	6,716	14.207	28.200	(29.906)	(1.706)
2b	15MW Wind farm RCT & NRW	36,722	11,194	21.808	45.816	(49.843)	(4.027)
3	3MW Wind farm RCT Only	7,620	2,323	3.161	7.154	(9.685)	(2.531)
4	6MW Solar farm RCT Only	5,598	1,706	4.811	13.099	(15.771)	(2.672)

Summary of RCT & NRW Projects

	31MW Wind farms RCT & NRW	84,439	25,739	46.902	99.351	(114.609)	(15.258)

Notes and Assumption

1) Wind projects are evaluated over 20 years and solar projects over 35 years;
2) Total Capital Investment includes construction costs, grid connections, fees, contingency/risk and project management;
3) It is assumed that the Capital Investment will be funded (subject to approval) by prudential borrowing;
4) Total Revenue Costs include operating and maintenance costs, insurance, metering and electricity, business rates, systems costs and borrowing repayments;
5) Total Revenue Costs and Total Income from Energy Generation are whole life costs over the economic project lives, subject to inflation and show real prices (in cash terms) not adjusted to show net present values.