Climate Change and Biodiversity Proposals

Contents

1 Introduction

This document lists some proposed actions to address Climate Change and Biodiversity Loss. It is not intended to replace the Council's Action Plan but to supplement it by providing a set of proposals with some initial details of possible costs, benefits and suggested targets. It is not expected that the Council adopts all these proposals but to give serious consideration to each.

It is widely recognised that the climate emergency now demands swift and ambitious action by everyone. Nobody has expressed this better than the UN Secretary General in his speech on Dec 2 (ref1). There is a great deal the Council can do to contribute to this global challenge, and in so doing set an example to others. It is hoped these proposals will provide some food for thought.

1.1 The Emergency

The climate emergency we all face has been apparent for some time but recent evidence suggests it is gathering pace and is exceeding the worst case pathways explored in the IPCC's reports.

Sea level rise, as well as having a devastating effect on coastal and low-lying communities is also a good proxy for the progress of climate change, as it is the consequence of many interacting processes. The report published in the Proceedings of the National Academy of Science (PNAS) in May 2019 (ref 11) shows how sea-level rise is likely to be over 2m by 2100 *which is more than double the predictions of the worst case pathways in the IPCC 5th Assessment Report (AR5).*

The consequences of climate change are described in the government's Climate Change Committee (CCC) risk assessment, which identifies 6 main risks:

- flooding and coastal change
- health, well-being and productivity
- water shortages, including risks for the public water supply, agriculture, energy generation and impacts on freshwater ecology
- natural capital and biodiversity
- food production and trade
- new and emerging pests, diseases and invasive non-native species.

These risks arise as a result of three main factors: sea level rise and acidification, and an increase in the frequency of severe or extreme weather events; affecting rainfall, humidity, heat and wind.

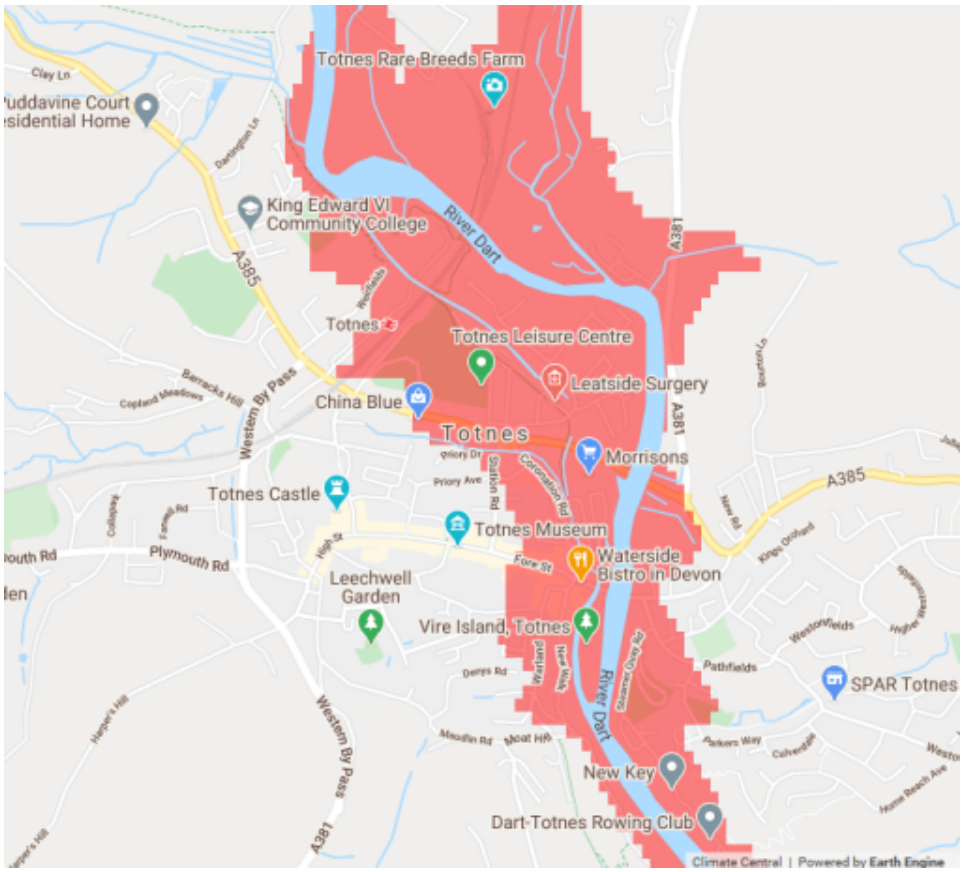
According to Natural Devon (ref 3), South West England is experiencing almost 10% more rainfall per year than in 1961. On average, it has decreased by 9% in the summer and increased in the autumn by 28% and in the winter by 16%. These changes, alongside severe weather events, have an affect on farming and nationally this year there has been an estimated average loss to farmers in excess of £200 per hectare (ref 7).

The impact of climate change on East Devon has been modelled using the Met Office climate projections data UKCP18. (see ref 2). This is has shown an expected temperature rise of 4.1C by 2100 and has analysed the likely flooding caused by a UKCP18 projected 54cm sea-level rise, together with a local highest astronomical tide (HAT), giving a tide 3.86m above current mean sea level.

Unfortunately, no such analysis has been done for the South Hams as yet. However, a simple illustration of the threat we face in the South Hams can be illustrated by a couple of maps that show those areas that are likely to be subject to annual flooding by 2050… 30 years away (ref 9). The likelihood of annual flooding in this case is an indication of the viability of a location for continued human habitation, be it domestic or commercial.

It is important to note that the maps are based on the IPCC RCP4.5 model for expected sea-level rise and so do not take account of the PNAS report. It is therefore reasonable to assume that the situation illustrated by the maps could be achieved before 2050. These maps do not take account of astronomical tides.

The map below shows the area that may be subject to annual flooding in Totnes by 2050. The flood defence scheme that was completed in 2018 is not designed to address climate change events and the EA have stated: "The Totnes flood defences are designed to protect the town from certain size tidal and fluvial floods – 'design' events – in the present day. However, flood risks are likely to increase over time due to climate change".



The map below shows how the South West may suffer increasing disruption due to flooding of arterial routes into Devon and Cornwall. This is an illustration of why building a locally sustainable economy is so important as part of the plan to adapt to climate change.

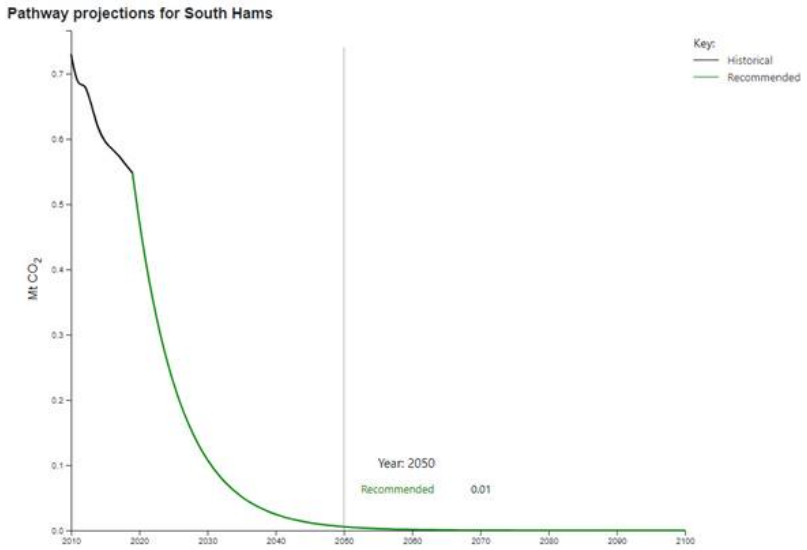
1.2 Carbon Offsetting

The Paris Climate Change Agreement set a target for global warming of between 1.5C and 2.0C. The IPCC has estimated that to limit global warming to 1.5C we will need to limit atmospheric CO2 to 430 parts per million (ppm).

As of Nov 2020 it stands at 414ppm – as measured by NOAA. This is an increase of 3.6ppm from last year and suggests we have about 4.5 years left to achieve the 1.5C target. (This is commensurate with the 6 years left mentioned in the Tyndale report – see below)

The Council has determined that its carbon footprint is approximately 8000 eCO2 tonnes. It would be possible to offset this at 2020 prices at an approximate cost of £13.8 per eCO2T. So for £110k the Council could declare itself net-carbon neutral. It is not expected the council will do this but it is suggested that there needs to be a clear undertaking by the Council that it will only use carbon-offsetting as a last resort and will never exceed 10% of its overall carbon footprint.

The South Hams needs to do all it can to contribute to bringing the increase in atmospheric carbon under control and not delegate this to outside the district. The Tyndale Centre report (ref 6) provides a suggested pathway, which need not be followed slavishly, but nonetheless is indicative of the scale of what is required.



This suggests an annual reduction in emissions of 13.7%, *starting immediately*. As stated in the Tyndale report, if nothing significant is done then in just 6 years we will have exceeded the carbon budget that was allowed to keep global warming to the targets agreed in Paris.

SHDC has an important role in providing the leadership, coordination, planning and some funding to achieve this locally. Reduction of its own carbon emissions, while very important in terms of setting an example, should not be its primary focus as this represents only 1.3% of the 608ktCO2 (2014) emitted by South Hams. It needs to harness the expertise and resources of local organisations and community groups and work alongside them on a day-to-day basis to achieve the significant reductions needed.

1.3 Resources

Many of the proposals below require officer time as well as funds and this needs to be resourced. Currently the Council has set aside £400k for addressing climate change. If one assumes this is spent over 4 years, this represents just 1% of the Council's expenditure. By itself this sum is clearly not sufficient to address the climate emergency effectively, given the scale of the change and actions needed. However, there are other resource and funds available that can be brought to bear:

- SHDC earmarked reserve for creating local jobs of £3,500,000. There are many projects that would help build a local green-economy, provide jobs and local expertise and address the immediate needs of the climate emergency.
- SHDC unearmarked reserves of about £1,900,000. While this may be for emergencies that require short-term response times it is not unreasonable to draw on this reserve to some degree where to do so would mitigate against likely catastrophic events in the future.

- The government has recently published its National Infrastructure Strategy - “Fairer, faster, greener” which includes funding of: £5 billion (£6.5M for South Hams*) for buses and cycling; and a new £4 billion (£5.2M for South Hams) cross-departmental Levelling Up Fund that will invest in local infrastructure. Note: bids for these funds require the local MP’s approval.
  [* based on South Hams population representing 0.131% of the UK]

- Active Travel Grants

- EV Charging Point Grants

- Green Homes Grant (LA version and domestic version)

- Renewable Heating Incentive and ECO grants

- The Rural Communities Energy Fund is a £10 million programme, run by BEIS, to support rural communities in England to develop renewable energy projects which provide economic and social benefits to the community.

- Public Works Loan Board (PWLB) has recently reduced its interest rate by 1% and while there are stricter criteria in place the guidance does not preclude applications that would that deliver resilience within communities and address climate-change. However, projects will need to be submitted as part of an expenditure plan with a possible exit strategy. *This serves to emphasis the need to begin the process of planning as soon as possible.*

References:

1. UN Secretary General Speech 2 Dec 2020
   https://www.un.org/sg/en/content/sg/statement/2020-12-02/secretary-generals-address-columbia-university-the-state-of-the-planet-scroll-down-for-language-versions

2. Met Office - UK Climate Projections
   https://www.metoffice.gov.uk/research/approach/collaboration/ukcp/index

3. Natural Devon - Climate Change and Energy
   https://www.naturaldevon.org.uk/wp-content/uploads/2019/07/Climate-Change-and-Energy.pdf

4. Climate Change Study in East Devon
   https://uwe.maps.arcgis.com/apps/MapJournal/index.html?appid=bc3a9c4e3b6649d590da32f58a59a354#map

5. Gov – Traded Carbon Value
   https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/794186/2018-short-term-traded-carbon-values-for-appraisal-purposes.pdf

6. Tyndale Centre – South Hams Carbon Budget
   https://carbonbudget.manchester.ac.uk/reports/E07000044/

7. Farmers Weekly - The cost of extreme weather for UK farmers
   https://www.fwi.co.uk/news/weather/exclusive-survey-the-cost-of-extreme-weather-for-uk-farmers

8. IPCC – Summary for Policy Makers
   https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_summary-for-policymakers.pdf

9. Flooded Future: Global vulnerability to sea level rise
   https://www.climatecentral.org/news/report-flooded-future-global-vulnerability-to-sea-level-rise-worse-than-previously-understood

10. Exeter University – Baselines and Trajectories for CO2 Emissions in Plymouth, South Hams and West
    https://www.plymouth.gov.uk/sites/default/files/BaselinesTrajectoriesForCarbonDioxideEmissionsPlymouthSouthHamsWestDevon.pdf

11. PNAS - Ice sheet contributions to future sea-level rise from Structured Expert Judgement
    https://www.pnas.org/content/116/23/11195

12. NFU – Devon Farming Figures
    https://www.nfuonline.com/assets/9491

2 Renewable Energy

2.1 Solar Panels over Council Car Parks

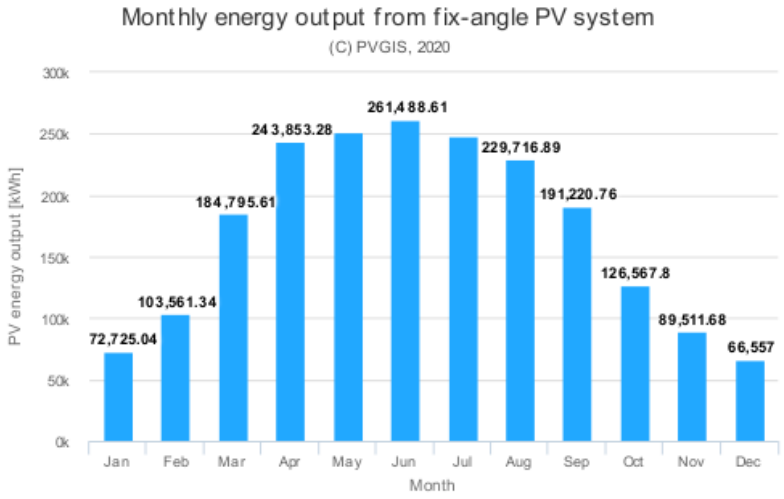
Installing solar PV panels over a car-park is cheaper and more effective than installing on roof-tops.

The Council owns 32 car-parks many of which could have solar panels installed over the parking bays to generate power for EV charge points and for local businesses and households where possible. The following calculation demonstrates the potential and assumes only 50% of the 2775 parking bays will be suitable (possibly due to shade from buildings or trees).

Number of parking bays: 2775 /2 = 1387.
The standard size of a parking bay is 2.4m x 4.8m = 11.52 m^2. So a total available area of 15978 m^2.
It is general accepted that the peak output from a 1 m^2 solar panel is 125 Wp giving ~2000 kWp overall.

The kWp is an ideal measure and then needs to be converted into kWh pa taking into account solar incidence, which is dependent on latitude, and other factors. This is a complex calculation and using the Photovoltaic Geographical Information System (ref 3) yields an annual figure of ~2000 MWh.

To put this in context, if we take OfGen's Typical Domestic Consumption Value (TDCV) for a medium user of 4,200 kWh pa, the electricity generated would be sufficient to power ~475 homes.



Proposal	Survey all car-parks with a view to developing a business proposal that includes consideration of the usage of the generated renewable power to benefit local businesses and promote EV usage. Work with Re:Fit (see ref 4) and TRESco and others. It may be suitable for some car-parks to utilise similar arrangements as have been achieved for the roof of the Pavilion in Totnes where the area is leased to Totnes Renewable Energy Society.
Benefits	Potential energy saving of 2000Mh pa. Carbon saved 466tCO2 (using BEIS conversion factor of 0.23314 kg CO2 save per kWh) Long term revenue source, local expertise, local resilience
Costs	Using ASPE case study, approximate project cost per bay is £1950, giving overall cost of £2.7M. Possible financed through PLWB and SHDC earmarked reserves (will create jobs). Possible funding via National Infrastructure Strategy. Creates a variety of revenue streams, EV Charging, electricity to local business subject to electricity sales regulations, private wire sales, sale to grid.
Targets	Business proposal: May 2021 Phased construction over 3 years.

References:

1. BRE (2018) Solar car parks: a guide for owners and developers. https://www.bregroup.com/wp-content/uploads/2018/03/99939-BRE-Solar-Carpark-Guide-Feb18-A4-24pp-nocrop-LR.pdf

2. Association for Public Service Excellence (APSE) – Swansea Case Study https://www.apse.org.uk/apse/assets/File/Swansea%2031_10_17.pdf

3. Photovoltaic Geographical Information System https://re.jrc.ec.europa.eu/pvg_tools/en/tools.html

4. Local Partnership – Re:Fit programme https://localpartnerships.org.uk/our-expertise/re-fit/

2.2 Private Sector Car Parks

Many super-markets have large car-parks that should also be covered. Just a few examples are:

Location	Bays	Solar PV area m^2	Energy MWh pa
Totnes – Morrisons	>800	~9200	115
Dartmouth – Sainsbury	~155	~1700	21
Kingsbridge – Tesco	~200	~2300	28

The potential renewable energy production (calculated as in the previous section) is significant.

Proposal	The Council work with local large car-park owners to encourage them to install solar covers and with a view to being part of a coordinated plan that would bring savings to all participants.
Benefits	CO2 emissions reduction.
Costs	There would be no additional cost and could bring overall project savings.
Targets	To start recruiting companies to join a scheme by end of 2021.

2.3 Local Energy

Currently, it is only possible to purchase electricity from a nationally licensed utility, and the cost and complexity of registering as such means it is very hard for small, local generators to compete. The Local Electricity Bill, which has successfully been introduced to Parliament aims to change this. But, while its introduction was unopposed, it has a long way to go before it becomes law.

However, there are alternatives and it is still possible to generate electricity locally and either provide the power directly or indirectly (sleeving) or sell it to the grid:

- Smart Export Guarantee – sell to grid
- Private wire – provide direct to end user(s)
- Energy Local Clubs (ref 6, used by Totnes Renewable Energy Society on the Pavilion project)

There have been local successes and of particular note is South Brent Community Energy which has a 225kW wind-turbine and a 9.88kWp PV array.

Local energy production can be migrated to local energy network sales in due course.

Proposal	The Council should continue to actively support the Local Electricity Bill. The Council should encourage local community energy production projects by providing seed funding for a project's feasibility study and help in acquiring further funding. It should actively engage with local partners like Totnes Renewable Energy Society and others. The Council should work with partners to develop a programme of project delivery.

Benefits	Encourage local renewable energy production, creates local green skills, sustainable resilient communities.
Costs	Draw on Rural Communities Energy Fund and extra funding from CCB fund and earmarked reserves where green jobs are created.
Targets	Invite projects Jan 2022

References:

1. Local Electricity Bill
   https://powerforpeople.org.uk/the-local-electricity-bill/

2. Devon Community Energy
   https://www.devoncommunityenergy.org.uk/

3. Grid Watch – National Grid demand and output by fuel type
   https://gridwatch.co.uk

4. South Brent Community Energy Society
   http://www.sbces.org.uk/

5. Gov – The Smart Export Guarantee Order 2019
   https://www.legislation.gov.uk/uksi/2019/1005/contents/made

6. Energy Local
   http://www.energylocal.co.uk/

2.4 Hydro Power

Micro Hydro can be very efficient and can produce 100kW output with the right flow volume and head. Given the many rivers and mill-leats in the area there will be many locations suitable for these units.

Proposal	Build a register of likely communities that could benefit from this technology. Discuss with local environment and community groups to explore possible projects. Provide support in terms of project planning and funding.
Benefits	Provide renewable energy to local homes. Build up local expertise in green skills. Builds local resilience and community involvement.
Costs	Officer time
Targets	Register complete by end of 2021. First project complete by end of 2022.

References:

The British Hydropower Association - A Guide
https://www.british-hydro.org/wp-content/uploads/2018/03/A-Guide-to-UK-mini-hydro-development-v3.pdf

2.5 Water Source Heat Pumps

Plate heat-exchanges, aka water source heat pumps, can be placed in rivers and on lake beds. They are much more efficient than air source heat pumps and can be used in community heating projects. (see refs below)

There are many villages across the area where homes are very close to water-courses of some form that could benefit from this form of heating either individually or as part of a community project.

Proposal	Build a register of likely communities that could benefit from this technology. Discuss with local environment and community groups to explore possible projects. Provide support in terms of project planning and funding.
Benefits	Provide renewable energy to local homes. Build up local expertise in green skills. Builds local resilience and community involvement.
Costs	Officer time
Targets	Register complete by end of 2021. First project complete by end of 2022.

References:

Energy Saving Trust - Could a water source heat pump work for you?
https://energysavingtrust.org.uk/could-water-source-heat-pump-work-you/

Gov - National Heat Map:Water source heat map layer
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/416660/water_source_heat_map.PDF

2.6 Business Rates for Farmers

Agriculture does not attract business rates. However, if a farmer uses land for renewable energy production (eg. solar, wind or anaerobic digester) that was not for use by the farm then there would be a liability for business rates. Another example is a farm-shop that sells produce that is not produced on the farm.

While the business rates system is still under review, Section 69 of the Localism Act 2011 does give Local Authorities the power to give a locally determined discretionary discount on business rates.

Proposal	A policy is developed on how to assess any proposals brought forward by farmers and landowners for renewable energy production that is in excess of on-farm needs and for farm-shops and similar ventures that encourage local food production, so that a business rate discount can be awarded. This might not apply to large scale 3rd party developers.
Benefits	Assist local hard-pressed farmers to diversify. Encourage local food sales and renewable energy production.
Costs	As agriculture is in general not a contributor to business rates the loss of income to the Council will not be significant. Possible partial retrospective for existing installations.
Targets	Policy in place and approved by March 2021.

3 Travel and Transport

3.1 EV Charging Points

Transport is a significant contributor to total carbon emissions and the sooner this can be reduced the better. To do this the take up of EV transport needs to be encouraged and this means charge-points must be available. Not everyone has off-street parking and so there is a need to provide publicly accessible charge-points in car-parks, street-parking and in residential areas. Clearly, a further encouragement is the government's commitment to ban the sale of new ICE cars and vans after 2030.

The Office for Low Emission Vehicles (OLEV) has three grants for charging points:

1. The Electric Vehicle Homecharge Scheme (EVHS) - up to £350.
2. The Workplace Charge Scheme (WCS) – up to £350 per point and max of 40 points.

3. Local Authorities can apply for up to 75% of the capital costs for on-street residential projects. There is £20m available for 2020/21.

DCC currently has the DELETTI Project for Electric Vehicle Charge Points (contract CP1942-20)
DCC is preparing a bid for money and is looking for projects across the county to include.

Street lighting
LED street lighting draws a lot less power (~10%), so the supporting delivery network has spare capacity. One use is the installation of EV charge points on the lamp-posts or a nearby bollard.

DCC is responsible for street-lighting across the county. Its energy supplier is Npower, supplied through Laser Energy Group who are part of Kent County Council who are DCC's primary contractor. Npower uses 37.9% renewable energy sources, which is fairly typical of the so called 'big six'. However, this percentage is steadily increasing.

Proposal	The Council should engage with its Town and Parish Councils to ensure that it is properly represented in any DCC bid for help with Charge Points. Charge points would also be part of the car-park solar cover proposal (above)
Benefits	Encourage take up of EVs.
Costs	Can be as low as £100 per charge point (using LED lamp-posts)
Targets	DCC deadline Installations by end of 2021

References:

1. Gov - On-street Residential Chargepoint Scheme guidance for local authorities
   https://www.gov.uk/government/publications/grants-for-local-authorities-to-provide-residential-on-street-chargepoints/grants-to-provide-residential-on-street-chargepoints-for-plug-in-electric-vehicles-guidance-for-local-authorities

2. Gov - Grant schemes for electric vehicle charging infrastructure
   https://www.gov.uk/government/collections/government-grants-for-low-emission-vehicles

3. Map of charging points
   https://www.zap-map.com/live/

4. Database of Electric Vehicles available in the UK
   https://ev-database.uk

5. EV Street Charging
   https://www.evstreetcharge.co.uk/

6. Lucy Zodian
   https://www.lucyzodion.com/street-lighting-infrastructure-and-on-street-ev-charging/

Commercial Networks

7. Charge Master
   https://bpchargemaster.com/

8. Pod Point
   https://pod-point.com/

9. Rolec
   https://www.rolecserv.com/ev-charging/product/free-ev-home-charging-points

10. Charge Point
    https://www.chargepoint.com/en-gb/

3.2 Load Sharing

Approximately 30% of trucks on the roads are empty according to estimates from the DfT. While there does exist load-sharing schemes for long-haul freight there appears to be nothing that addresses the needs of regional/local businesses.

Proposal	The Council helps to set up a project to go to local businesses across the district to compile data on their logistical operations and to formulate a plan and agreements in partnership with them. This may involve setting up a load-booking web-site for instance. The potential for businesses to save money, to ease congestion and to lower emissions is enormous and should be self-financing.
Benefits	Reduction in traffic and CO2 emissions. Building of community neworks.
Costs	Seed funding for a partner organisation: ~£20,000 from CCB fund.
Targets	Operational by end of 2021

References:

DfT - Domestic Road Freight Statistics, United Kingdom 2017
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/728937/domestic-road-freight-2017.pdf

3.3 Active Travel

Active Travel is a term that is largely self explanatory. It benefits both the traveller and the environment. It reduces CO2 emission and a spectrum of pollutants from ICEs and results in a fitter population both physically and mentally.

The government has provided £2bn to promote active travel, which will be provided in two phases. The first is for covid-19 specific projects and the second for longer term projects. The allocation for Devon is £338,000 in phase 1 and £1,283,450 in phase two.

There exists numerous cycle paths as document by the National Cycle Network and others. However many are not connected and there is no district-wide strategy to connect the population centres.

There also exists many cycle groups like PL:21 in Ivybridge, Primrose Trail in Kingsbridge and numerous others that are trying to create cycling infrastructure.

Proposal	The Council work with local groups to develop a district-wide strategy and help with funding bids to promote active travel and develop a connected network. The Council include and work with cycle-hire businesses to promote the use of electric bikes for short-journeys and to draw down funding. The Council develop plans to help those business to create jobs using ear-marked reserves
Benefits	Health, environment, well-being, green-economy
Costs	Given South Hams represents ~11% of the population of Devon (13.2% by area), one would should expect about £140,000 of the Active Travel funding to be available for South Hams projects.
Targets	Preliminary report – end of 2021.

References:

UK Gov – Two billion package to create a new era for cycling and walking
https://www.gov.uk/government/news/2-billion-package-to-create-new-era-for-cycling-and-walking

SUSTRANS – find a route
https://www.sustrans.org.uk/find-a-route-on-the-national-cycle-network/

3.4 Electric Vehicles Car Clubs

EV Car Clubs are increasing popular and can bring community benefits. In Totnes we have E-Co Cars but their cars are not EV yet due to the lack of EV charge points. This social enterprise is very successful and has been limited only by the lack of available parking. It would expand if parking capacity was made available.

Car-clubs encourage the use of other forms of transport while maintaining the access and convenience of a car. These enterprises will turn to EV as charge points become more available. They should be seen as part of the Active Travel initiative.

Grants for EVs
Office for Low Emmission Vehicles (OLEV) has the Plug-In Car Grant (PICG) as below:

- Up to £3,000 provided the car has CO2 emissions of less than 50g/km and can travel at least 112km (70 miles) without any emissions at all.
- 20% of the cost of a van, up to a maximum of £8,000
- 20% of the cost of a motorcycle, up to a maximum of £1,500

Proposal	EV Car Clubs in our towns and villages should be encouraged and the Council should work with partners like E-Co Cars and others to help set these up. There may be a need for parking to be made available and EV charge points.
Benefits	Freeing up parking spaces – potentially less cars needed in a community, Environmental benefits of EVs, Increased familiarity with electric vehicles, Reduced costs of living – cheap to run 3-5p per mile - upkeep, maintenance, depreciation is shared. Available to those that cannot afford an EV
Costs	Grants and loans (repayable over 3 years) for start-up costs: purchase/lease the vehicles, telematic booking system, insurance, etc. Possible access to Active Travel grant funding. Example EV cost: Nissan Leaf: Cost ~ £29,000, Lease ~ £220 pm.
Targets	First projects end of 2022.

References:

Business Case for Community Car Club (non EV study)
https://como.org.uk/wp-content/uploads/2018/06/Business-case-for-community-car-clubs-final.pdf

Gov - Low-emission vehicles eligible for a plug-in grant
https://www.gov.uk/plug-in-car-van-grants

e-co cars
https://www.e-cocars.com/

3.5 The Last Mile (or two)

The rise and rise of online retail means the roads and lanes of the area are full of delivery vans of all shapes and sizes causing congestion and environmental damage.

Proposal	Communities are supported so they can provide a central drop-off point and electric delivery and people buggy. The drop-off point would be a volunteer manned location … could be a Village Hall, Church, Shop, Pub, etc. A community-led project that would be seed-funded. There are many models of electric buggy/deliver vehicles available at different price levels. The price tends to reflect: power-rating and range. A guide price would be £7000 for a sufficiently powerful vehicle with a 25 mile range. On-costs for maintenance and charging: £2000 pa. Initially paid for by SHDC and thereafter funded by the community.
Benefits	Reduced CO2 emission, less congestion in lanes, safer for cyclists
Costs	10 parishes per year: £100,000
Targets	First projects end of 2021

3.6 Reducing Food Miles

'Food Miles' is a bit of a simplistic measure when taken without regard to other factors. Out of season produce that has been air-freighted-in may, in some circumstances, be better than locally produced produce stored for months in a refrigerator powered by non-renewables. The key to overcoming many of these complications is to eat what is in season locally and where there is refrigerated storage it is powered from a renewable source.

Proposal	Work with local organisations to establish a directory of local suppliers that fulfil the criteria. Work with a panel of local chefs to develop recipes based on locally available foods. Establish an information site and an opt-in accreditation scheme for local food growing and supply businesses. Help support community fridges powered by renewable energy (car-park solar and local energy networks)
Benefits	Promotes a local sustainable economy.
Costs	Officer time
Targets	End of 2021

Reference*:*

The Myth of Food Miles
https://www.theguardian.com/environment/2008/mar/23/food.ethicalliving

3.7 Reducing Caring Miles

The lack of Affordable/Social Housing is a Green Issue. Affordable housing tends to be in urban areas like Plymouth. However, sectors of the economy like 'caring' cover the whole of the district. This means that many carers visiting patients across the South Hams are commuting long distances. The root cause is there are insufficient local carers as they can't afford to live in the communities they serve. This is a much wider problem but it deserves to be treated as a 'green' problem.

Proposal	Purchase properties that fulfil a set of well defined criteria: threshold price, condition and most importantly geographical distribution.
Benefits	Address the lack of affordable housing.
Costs	Funded from earmarked affordable housing.
Targets	Policy development (6 months)

3.8 River Dart

The A roads from Totnes to Dartmouth / Kingsbridge carries 11,000 vehicles a day many of which are commercial. A very rough estimate might be 10 tonnes carried by 10% of vehicles being 11,000 tones per day

Proposal	The river Dart is navigable up to Totnes and there is sufficient water on average neaps and so could be used to move bulk materials between Totnes and Dartmouth (as it used to). Eight medium sized lighters going up and down on each tide could shift 100 x 8 tonnes per tide, so 1,600 tonnes per day, using very little fuel as they would work the tides and could take 15% of haulage traffic off the roads. Eight lighters working the turn of each tide would have no impact on the amenity value of the river.
Benefits	Reduction in heavy traffic and CO2 emissions.
Costs	The Council is in a position to examine the possibilities and the planning implications and produce a feasibility study to include set up costs and profitability. Part of the Capital Investment Programme.
Targets	Preliminary report – end of 2021.

References:

Government Office for Science - Understanding the UK Freight Transport System
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/777781/fom_understanding_freight_transport_system.pdf

3.9 MagWay

MagWay is a company that aims to provide a means of parcel delivery using pallets powered by electric linear motors running through tubes. This technology is the future. It will evolve to carry greater loads and eventually to carry people in 10-15 years. But the first phase is ready to use now. It can remove a great deal of unnecessary delivery transport from our roads. In time it will revolutionise freight transport, and Highways England are working with them as are many other Local Authorities.

Note: I (JM) have had a long and interesting chat with their Technical Director (Rubert Cruise) and their CEO (Anna Daroy).

This is undoubtedly an ambitious proposal but bears further investigation, possibly in collaboration with DCC and other partners.

Proposal	A feasibility study of establishing a MagWay connection between South Brent and Kingsbridge (along the old rail route) and a similar connection down the Dart between Totnes and Dartmouth. There would be many aspects to consider including terminals, planning and other aspects. A preliminary report might be prepared followed by a more detailed analysis.
Benefits	Reduce road traffic and CO2 emissions.
Costs	Suggest £20,000
Targets	Preliminary report – end of 2021.

References:

Magway
https://magway.com

Virgin Hyperloop
https://hyperloop-one.com/

4 Waste

4.1 Waste Hierarchy

SHDC has policies in place to manage household waste in accordance with DEV31 of the JLP and the W4 of the Devon Waste Plan. There exists a comprehensive waste management plan, and SHDC have achieved an impressive recycling rate of ~54% in 2018/19. Also, it has managed to eliminate the need for 'Dispose' for domestic waste and concentrates its efforts on Recover.

However, despite the obvious successes there is a need to reduce CO2 emissions from the Recover and Dispose operations (see 4.2 below) and to increase efforts to promote the top four elements of the hierarchy, as by definition these are the much less environmentally damaging options.

Proposal	Any reduction in payments from the DCC - Reuse Credits Scheme to local organisations should be compensated for with payments from the CCB fund. To address Prevent and Reduce SHDC should provide educational material and run workshops for community groups and business groups. Provide grants to set up and run 'reuse' community facilities. Work with Refurnish and many others to develop and network. "Pretty Local" recently ceased trading but could have been given more support in the context of a programme to deliver a community 'reuse' economy.
Benefits	The prevent and reuse of materials is the best way of stopping waste becoming a source of pollution and CO2 release.
Costs	Use of Localities Funding support from CCB fund and earmarked reserves for creating jobs.
Targets	Programme by end of 2021.

References:

1. DCC – Resource and Waste Management Strategy for Devon and Torbay
   https://democracy.devon.gov.uk/documents/s32889/HIW-20-34.pdf

2. DEFRA - UK Statistics on Waste
   https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/784263/UK_Statistics_on_Waste_statistical_notice_March_2019_rev_FINAL.pdf

3. DEFRA – Guidance on the Waste Hierarchy
   https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69403/pb13530-waste-hierarchy-guidance.pdf

4. DEFRA – Rational for Waste Prevention
   https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/264909/wpp-evidence-overview.pdf

4.2 Community Small-Scale Anaerobic Digesters

None of South Hams' waste goes to landfill. After recycling, residual waste goes to the Energy from Waste (EfW) Combined Heat and Power (CHP) incinerator in Plymouth. This facility processes about 245k tonnes of waste per year. As 1 tonne of waste yields 0.7 to 1.7 tonnes CO2 (ref 2), there will be CO2 emissions of about 250k tonnes per year. (Note :the Environment Agency does not require CO2 levels to be monitored or reported as part of the operating license as CO2 is not deemed to be a pollutant).

About 15k tonnes pa of residual waste comes from the South Hams and will result in approximately 15kt of CO2 release. This represents about 2.5% of South Hams emissions which is a small but significant amount.

The facility also provides heat to the docks which means 70kT of CO2 are not generated by the docks giving an overall CO2 emissions total of 180kt.

The plant produces 190,000 MWh pa giving a carbon intensity of ~950g CO2e per kWh. This is *2.7 times greater* than gas generated power which produces 340g CO2e per kWh (ref 2).

Long term reliance on incineration is not sustainable (ref 1).

There are other technologies that could replace incineration and could be retro-fitted as discussed in ref 4. However, the timescales for these are long. There is therefore a need to drive down the 15kt of CO2 emissions from the South Hams.

Small scale anaerobic digesters (AD) are a reality and can produce valuable outputs as well as generating electricity. They can benefit from Smart Export Guarantee (SEG) for installations up to 5MW or used to power local business. A recent feasibility study for the Dartington Estate by the Totnes Renewable Energy Society (TRESoc) demonstrated the economical viability of a proposed plant. By working with partners like TRESoc to set up local ADs would bear down on the 15kt CO2 emissions as well as help reduce emissions from agriculture and the hospitality sector. Start up costs can be quite high at about £200,000 but with a return in 4-5 years. There would be revenue for the local community and it would also serve to build up 'green skills' in the area.

Proposal	The Council works with partners like TRESoc and others to identify how best to deploy Anaerobic Digesters.
Benefits	Address the CO2 emissions from waste. Reduce waste miles. Green-energy. Green skills. Provide long-term resilience to communities.
Costs	Assist access to the BEIS Rural Communities Energy Fund and supplement as required from PWLB and earmarked reserves.
Targets	First project end of 2022.

References:

1. The impact of Waste-to-Energy incineration on climate (2019)
   https://zerowasteeurope.eu/wp-content/uploads/edd/2019/09/ZWE_Policy-briefing_The-impact-of-Waste-to-Energy-incineration-on-Climate.pdf

2. Environment Agency - Pollution inventory reporting –incineration activities guidance note
   https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/923125/Pollution-inventory-reporting-incineration-activities-guidance-note.pdf

3. MVV – Plymouth EfW CHP
   https://www.mvv.de/en/about-us/group-of-companies/mvv-umwelt/thermal-waste-recycling/plymouth-efw-chp-plant

4. Energy from Waste and the Circular Economy
   https://www.birmingham.ac.uk/Documents/college-eps/energy/Publications/energy-from-waste-policy-commission-report-2020.pdf

5. Future of Small Scale Anaerobic Digestion
   https://www.biogasworld.com/news/future-small-scale-anaerobic-digestion/

6. Gov - Anaerobic Digestion Strategy and Action Plan
   https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69400/anaerobic-digestion-strat-action-plan.pdf

7. Circular - UK small scale biogas provide "significantly negative" carbon emissions
   https://www.circularonline.co.uk/news/uk-small-scale-biogas-provide-significantly-negative-carbon-emissions/

8. Gov – The Smart Export Guarantee Order 2019

https://www.legislation.gov.uk/uksi/2019/1005/contents/made

5 Greening and Biodiversity

5.1 Flooding

Sea level rise is a challenging threat but so to is the flooding due to the increasing frequency of heavy rainfall events. To address this issue there is a need to work on the upstream catchments to slow down the volume of flood water that flows off Dartmoor. The Dartmoor Headwater Management Project is a pilot to gather data on effective management techniques. Given the threat to the communities of South Hams the Council should work closely with the Dartmoor National Park to assist, through its members and local projects and education, in encouraging an increase in natural vegetation and tree cover in the catchments and to nurture the bog lands that act as a natural sponge and carbon sink.

Proposal	The Council should consult with Dartmoor National Park and the Environment Agency on the outcomes of its pilot and determine how it could best assist in mitigating fluvial flooding through its connections with partners and the community.
Benefits	Reduced risk of flooding. Community involvement, education and resilience
Costs	Officer time
Targets	Ongoing.

Dartmoor Headwater Management Project
https://www.dartmoor.gov.uk/wildlife-and-heritage/our-conservation-work/dartmoor-headwaters-project

Exmoor Mires Partnership
https://www.exmoor-nationalpark.gov.uk/Whats-Special/moorland/exmoor-mires-project

5.2 Tree planting

The levels of CO2 in the atmosphere are the highest humans have ever experienced. There is not only a need to reduce emissions but to draw down CO2 levels. All IPCC pathways require so called Negative Emissions Technology (NET). A tree is one of nature's best NETs. However, trees can take a decade before they are effective, so the faster they are planted the better. Doubling the number of trees across the UK would account for 10% of current CO2 emissions. The national average for woodland cover in the UK is only 13%, compared to an EU average of 37%.

Assuming an approximate current tree cover of 8% across the South Hams (88,650 ha), this represents about 7000 hectares. So to double the tree cover requires planting another 7000 hectares over 10 years. So 700 hectares per year. Trees are planted at a density of 1000-2500 per hectare. So assuming 2000 then to cover 700 hectares means planting 1.4 million trees per year (27k per week).

Proposal	The Council needs to build a register of sites by inviting participants to join the campaign and to manage this over the 10 years. The Council should consider acquiring and planting land, especially close to sensitive areas like Greater Horseshoe Bat flyways and feeding zones.
Benefits	Carbon sequestration addressing ~10% of emissions.
Costs	Saplings (whips) can be obtained from Woodland Trust for nothing plus planting advice. Cost of Land … Increase remit of tree officer
Targets	Preliminary plan by planting season (October) 2021.

References:

Woodland Trust - Large Scale Tree Planting
https://www.woodlandtrust.org.uk/plant-trees/large-scale-planting/

Woodland Trust – Tree Coverage by MP Constituency
https://www.woodlandtrust.org.uk/media/43913/woodland-indicators-by-parliamentary-constituency.pdf

South Devon AONB – Trees and Woodlands
http://www.southdevonaonb.org.uk/coast-countryside/land/trees-and-woodlands

Moor Trees
https://www.moortrees.org/

5.3 Hedgerows

Devon is said to have some 33,000 miles (53,100 km) of hedgerows. In the South Hams, which represents 13.2% of the area of Devon, there will be approximately 4,300 miles (6900 km) of hedgerows. Assuming a width of 1.5m this represents ~1000 hectares. Note: many hedges are more like 4m at the base, so this is a conservative estimate.

The potential for this area to sequester and store atmospheric carbon is significant and there has been a great deal of research over the last decade to support this idea. Unfortunately, a high percentage (maybe 50%) of these hedges are cut back rigorously, some times several times a year, with a mechanical tractor mounted flail. There a good practical reasons for this activity but it has a devastating effect on the ability of the hedgerow to store carbon and greatly reduces its ability to support wild-life and a range flora. Also, the resulting pulverised wood quickly releases its stored carbon back into the atmosphere.

The Agriculture Act 2020 and the Environment Land Management Scheme (ELMS) may help to influence hedgerow management, but the ELMS roll-out will be slow. Also, it is part of a Local Authority's remit to help businesses reduce their environmental impact and in a rural area like the South Hams this must included farmers.

There are grants from the Rural Payments Agency (RPA) if a farm is in a Country Stewardship scheme.

There are number of hedgerow management strategies that can be adopted.

Proposal	Council appoints an agricultural liaison officer and works with the NFU and local exemplar farmers, of which there are many, to help communicate the benefits, both environmental and economic of better hedgerow management. Evening talks (free beer and a pasty!), literature, peer-to-peer contact with contractors (who do much of the hedge trimming), etc.
Benefits	Carbon sequestration and better wildlife corridors and biodiversity. Economic benefits to farmers … preparation for ELMS funding.
Costs	Officer time
Targets	Officer in place by March 2021.

References:

Utilising hedgerows for landscape scale carbon sequestration
https://www.agroforestry.ac.uk/sites/www.agroforestry.ac.uk/files/Axe%20Utilising%20hedgerows%20for%20landscape%20scale%20carbon%20sequestration%20final%20v2.pdf

Gov - Countryside hedgerows: protection and management
https://www.gov.uk/guidance/countryside-hedgerows-regulation-and-management

6 Green Economy

6.1 Training

There is a serious shortage of qualified people to implement energy saving upgrades across the South Hams housing stock. This is a problem that is hampering the take up of government grants and is delaying the ability of the district to deliver the important reduction in domestic household CO2 emissions necessary.

To obtain the Green Home Grant any works need to be done by a TrustMark accredited operator with the specific skills necessary for the particular work being done. At the time of writing there were just 3 companies, all based in Plymouth, not all of which have the full range of skills: Qerb Energy Ltd, Carbon Saving Group and Evolve Home Energy Solutions.

Proposal	The Council issue a call-to-arms to encourage local companies and those with the necessary skills to obtain TradeMark accreditation as matter of some priority. Registration via a TrustMark Scheme costs ~£65.
Benefits	Provide the workforce necessary to drive down the eCO2 emissions from homes which amount to 30% of the total.
Costs	Cost of communications
Targets	Double the number of TrustMark'ed operators able to serve the South Hams by end of 2021

References:

TrustMark – Find a trades person
https://www.trustmark.org.uk/find-a-tradesperson

6.2 Hemp Production and Use

Hemp is a very versatile plant which can be used to produce a range of products .Just some of these are:

- *rope* – hemp rope has been used for 1000's of years
- *textiles* – awnings, sails, clothing
- *biodegradable plastics* – a bio-plastic made from the cellulose content of the hemp fibre
- *paint* – based on hemp seed oil it has no VOCs and is not a water-based paint.
- *insulation* – thermal conductivity of hemp fibre is very low
- *biofuel* – made from the fibrous stems (cellulosic ethanol)
- *food* – based largely on hemp seed oil. A source of omega-3 fatty acids normally associated with fish, and other nutritional benefits.
- *paper and packaging* – a high sustainable paper and packaging alternative to soft-wood source
- *construction material* – hemp fibre mixed with organic resins can produce a very strong material that can be used in vehicle, boat and moulded structures.
- *building material* – fibre mixed with lime to create a concrete (hempcrete) that can continue to sequester carbon for many years while becoming harder and stronger.
- *medicinal* – varieties of hemp that have higher THC content and CBD content which are an important medicine for a range of conditions.

As well as being versatile, hemp can sequester about 15 tonnes of CO2 per hectare, during its growing cycle. And, when harvested and used to manufacture products there can remain a net negative carbon cost.

Proposal	The Council works with local bodies like the NFU and Chambers of Commerce to establish a pilot programme drawing on local and national funding resources. Establish a network of growers and manufacturing businesses.
Benefits	Net positive carbon sequestration. Reduction in dependence high CO2 materials and production methods. Sustainable business model building local resilience and jobs.
Costs	Officer time

Targets	To have a scheme ready for launch by end of 2021.

References:

HempWiki
https://hempwiki.com/hemp-products/technology-industry/

Wikipedia - Hemp
https://en.wikipedia.org/wiki/Hemp

UK Hempcrete
https://www.ukhempcrete.com/why-building-with-hempcrete-is-good-for-the-environment/

The Role of Industrial Hemp in Carbon Farming
https://hemp-copenhagen.com/images/Hemp-cph-Carbon-sink.pdf

Hemp car
https://www.youtube.com/watch?v=TugMbfnA3GI

Green Boats - a company building boats with hemp
https://green-boats.de/

6.3 Accreditation Scheme

There is a need to encourage businesses to make their operations less damaging to both the climate and the environment. To this end it is proposed the Council work with partners to promote an accreditation scheme. There is a confusing array of accreditation/certification/assurance schemes that are concerned with sustainability and the environment, but it has been suggested there is a need for a single South Hams and Devon brand that the public understands and a motivation scheme to encourage businesses to achieve the standard.

Proposal	The Council works with other authorities and standards agencies (like the Carbon Trust) to develop a rating system that can be applied to all businesses across the district. The rating should be linked to business rate discounts and other benefits.
Benefits	Help motivate businesses to reduce their carbon emissions. Build the networks that's are the life-blood of circular or doughnut green and resilient economies.
Costs	Reduction in business-rate income if scheme widely adopted.
Targets	To have a scheme ready for launch by end of 2021.

References:

Eco-Label Index
http://www.ecolabelindex.com/ecolabels/?st=country.gb

Wikipedia – Sustainability Standards
https://en.wikipedia.org/wiki/Sustainability_standards_and_certification

ISO 14001 – Environmental Management
https://www.iso.org/iso-14001-environmental-management.html

Carbon Trust – Carbon footprint accreditation
https://www.carbontrust.com/client-services/certification/product-footprint/

6.4 Community Crypto Currency

Totnes was a leader in Community Currencies with the Totnes Pound. While this initiative had only limited success it had the logistical disadvantages of a ‘fiat-like’ currency. These can largely be overcome by using crypto currencies.

Crypto currencies have been around for awhile now and are a mature part of the portfolio of most currency traders and many institutional investors. The market capitalisation across all crypto assets is now over $521 billion and rising. Paypal have recently started accepting BitCoin and many successful applications of the power of smart-contracts are being developed on the Ethereum, Avalanche, Polkadot and similar networks.

One such UK application is the Community Coin; HullCoin. It is based on two established crypto currencies; Ven and FeatherCoin. It has been very successful and has helped stimulate the local economy.

Proposal	The Council work with community partners and consult with Hull City Council to explore the model used in Hull and develop a proposal for the South Hams.
Benefits	Promotes the local economy and helps build local resilience and sustainability
Costs	Council starts initiative and draws on local expertise to take forward.
Targets	A proposal by the end of 2021.

References:

HullCoin
https://www.hull-coin.org/

Ven
https://ven.vc/

FeatherCoin
https://feathercoin.com/

FairCoin
https://fair-coin.org/

Article from Resiliance on Local Currencies
https://www.resilience.org/stories/2017-12-14/bitcoin-blockchain-and-local-currencies/

Community Currencies
https://www.grassrootseconomics.org/community-currencies

Community Currencies - Video
https://youtu.be/Hg8bWO8k3QY

Parliamentary Briefing 2014 (very old … but has some interesting content)
https://researchbriefings.files.parliament.uk/documents/POST-PN-475/POST-PN-475.pdf

International Journal of Community Currency Research
https://ijccr.files.wordpress.com/2019/09/ijccr_summer_2019_volume_23_issue_2-1.pdf

7 Council Internal

7.1 IT Disposal Policy

The Council continually retires end-of-life or surplus laptops and desktops. Currently these go to a contracted IT disposal company that guarantees the destruction of all data in compliance with ISO 12700 and other standards. Thereafter, these laptops tend to be broken up to recover precious and rare-earth materials.

There is a real social need for laptops by families in hardship, schools and other community support groups. These laptops should be donated to help these. Furthermore, by continuing the useful life of this equipment the Council will be fulfilling its commitment to 'reduce' waste, and thereby reducing CO2.

The need to ensure all data is properly destroyed prior to passing to 3rd parties is not a big hurdle, but it does require the development of an in-house protocol that would be easy to achieve.

Proposal	A policy is developed for the donation of surplus IT equipment.
Benefits	Social and environmental.
Costs	Possible software costs for data erasure.
Targets	A policy is in place by end of March 2021.

7.2 JLP Review (subject to new Planning Rules)

There is much that is good in the JLP and the subsequent SPD but it does not provide the necessary framework to deliver on the commitment of the Climate Change and Biodiversity Emergency declared in July 2019. This is a fundamental issue that hampers the Council's ability to properly address aspects of the Emergency. The whole of the JLP need not be reviewed, only those aspects that are clearly at odds with the Emergency.

Proposal	The Council together with its partners West Devon and Plymouth employs a suitably qualified officer to coordinate and drive this review, submit to the inspector and its adoption in 12 to 18 months. SH needs to take initiative. Note: There are no legal or procedural reasons to prevent this and reviewing the JLP does not in any way reduce its standing as has been suggested. The Council has declared a Climate Emergency and should review any policies that conflict with this.
Benefits	Social and environmental.
Costs	Officer time
Targets	A policy is in place by end of 2021.

8 Housing

8.1 Green Homes Grant

In Nov 2019 the Energy Saving Trust stated, "Household emissions from heating and hot water must reduce by 95% to reach 2050 net zero targets."

"The majority of household CO2 emissions come from heating (including generating hot water). Energy Catapult Analysis shows that in 2017, the average household generated 2,745 kg of CO2 emissions from heating, which is around 31% of the total. Until July this year, the UK was aiming to cut carbon emissions by 80% by 2050, which would mean reducing the carbon generated from heating to 692 kg CO2 annually. To reach the Net Zero 2050 target that the UK has now adopted, we need to go even further and reduce heating emissions to 138 kg CO2 per household. – a reduction of 95%."

This needs to be the mission of SHDC.

Cost and CO2 emission savings for a detached house:

Loft Insulation: £395 … 950kg CO2 pa … cost per kgCO2 pa = 2.4
Cavity-wall: £725 … 1080kg CO2 pa … cost per kgCO2 pa = 1.4
External Wall: £13,000 … 1840kg CO2 pa … cost per kgCO2 pa = 0.14

In the South Hams 70%+ of houses are rated ‘D’ or below and 50% could be E,F or G rated.

Dwellings in the South Hams 45,882 (2019), so lets say 46,000.

Very approximately, of these 33% are in flats leaving about 30,000 properties.

So there are probably about 15,000 properties with EPC rating of E,F or G.

While SHDC are spending £330k on external wall insulation and 2 heat-pumps for 30 properties, it needs to be appreciated that this addresses about 0.2% of the properties that need upgrading and will only reduce CO2 emissions by about 55 tonnes pa, and so will reduce the South Ham’s estimated domestic CO2 emissions of 165 kilo tonnes per annum by less than 0.04% .

How to achieve 95%
To achieve the 95% reduction needed requires a more comprehensive strategy that includes the drawing down of grants by individual households. The Council should use monies it is able acquire to achieve the greatest CO2 reduction.

Note: taking the 165 kt figure and dividing by the number of dwellings yields an estimate of CO2 per dwelling of 3587 kg CO2 pa, which is much higher than the EST national estimate of 2,745, which may demonstrate the inefficiency of homes in the South Hams.

Cavity-wall insulation is 10 times more cost effective, would reach 300+ properties (2%), with an overall CO2 reduction of 324 tonnes being 0.2% of the domestic total.

Proposal	As well as the training proposal (6.1), there needs to be a house by house appraisal using Council data and data from the English Housing Survey to optimise the combined approach of Council upgrades and resident upgrades. This may involve both in some cases.
Benefits	To obtain the greatest reduction in CO2 emissions as is reasonably possible.
Costs	Officer time.
Targets	Analysis and proposal by May 2021.

References:

Energy Performance of Buildings Certificates
http://dclgapps.communities.gov.uk/epc/epcdemo.html

English Housing Survey
https://www.gov.uk/government/collections/english-housing-survey

Appendix A - SHDC Car Parks

Area is based on bay size of 2.4m x 4.8m.

Town	Postcode	Car Park	Type	Bays	Dis	Vehicles	Area
Totnes	TQ9 5SP	Old Market	Long Stay	28	0	Cars; Motorcycles	322
Totnes	TQ9 6RJ	The Nursery	Long Stay	95	0	Cars;	1092.5
Totnes	TQ9 5DZ	Heaths Nursery	Short Stay	84	4	Cars;	966
Totnes	TQ9 5DZ	Heathway	Long Stay	56	2	Cars; Motorcycles	644
Totnes	TQ9 5EF	Victoria Street	Short Stay	114	7	Cars; Motorcycle	1311
Totnes	TQ9 5SF	Civic Hall	Short Stay	22	2	Cars; Motorcycles	253
Totnes	TQ9 5AL	Steamer Quay	Long Stay	51	3	Cars; Coaches	586.5
Totnes	TQ9 5AL	Longmarsh	Long Stay	137	6	Cars; LGV	1575.5
Totnes	TQ9 5NZ	North Street	Long stay	55	1	Cars; Motorcycle	632.5
Totnes	TQ9 5HW	Pavilions	Long Stay	119	0	Cars	1368.5
Totnes	TQ9 5HW	Pavilions Short Stay	Short Stay	21	0	Cars	241.5
Slapton	TQ7 2PN	Slapton Memorial	Long Stay	75	0	Cars; LGV	862.5
Slapton	TQ7 2TQ	Torcross Layby	Short Stay	35	2	Cars	402.5
Slapton	TQ7 2TQ	Torcross Tank	Long Stay	86	5	Cars; Coaches, Motorcycle	989
Slapton	TQ7 2PN	Strete Gate	Long Stay	98	0	Cars; Motorcycle	1127
DARTMOUTH	TQ6 9LW	Park & Ride	Long Stay	167	7	Cars; Coaches, LGV	1920.5
DARTMOUTH	TQ6 9NF	Mayors Avenue	Long Stay	214	5	Cars; motorcycles	2461
DARTMOUTH	TQ6 9LW	Leisure Centre	Short Stay	35	5	Cars	402.5
Kingsbridge	TQ7 1HH	Cattle Market	Long Stay	115	3	Car, Coaches	1322.5
Kingsbridge	TQ7 1LR	Duncombe Park	Long Stay	14	1	Car	161
Kingsbridge	TQ7 1PP	Fore Street	Long Stay	109	6	Car, Motorcycles	1253.5
Kingsbridge	TQ7 1EG	Lower Union Road	Long Stay	60	4	Car, Motorcycles	690
Kingsbridge	TQ7 1HN	Quay	Long Stay	232	15	Car, Motorcycles	2668
Salcombe	TQ8 8DU	Creek	Long Stay	242	0	Cars; Coaches, Motorcycles	2783
Salcombe	TQ8 8JQ	North Sands	Long Stay	83	4	Cars	954.5
Salcombe	TQ8 8ND	Shadycombe	Long Stay	66	2	Cars; Motorcycles	759
Salcombe	TQ8 8JE	Whitestrand	Short stay	21	2	Cars; motorcycles	241.5
Ivybridge	PL21 0AS	Leonards Road	Long Stay	187	0	Cars; Motorcycles	2150.5
Ivybridge	PL21 0RU	Glanvilles Mill	Short Stay	44	7	Cars; Motorcycles	506
Ivybridge	PL21 0AS	Hartford Road	Short Stay	26	0	Cars	299
Modbury	PL21 0QJ	Poundwell Meadow	Long Stay	69	2	Cars	793.5
Modbury	PL21 0QJ	Poundwell Street	Short Stay	15	1	Cars	172.5
			Total Bays	2775		Total Area (square metres)	31912.5
						kWp (assuming 125Wp/m2)	3989.06