

# Georgeham Parish - Climate Action Plan



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## Progress with Plan since 2019

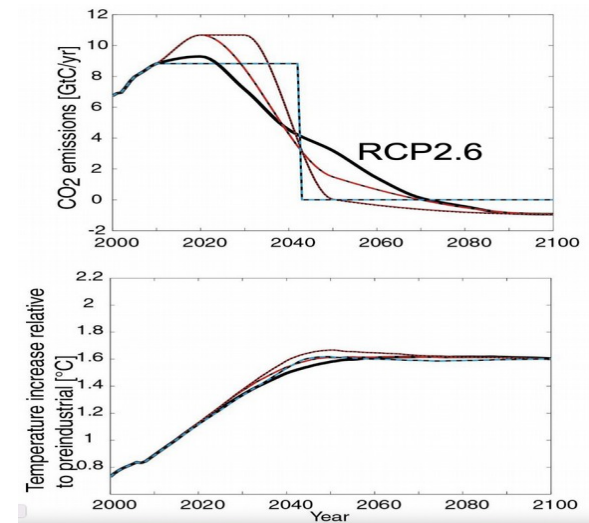
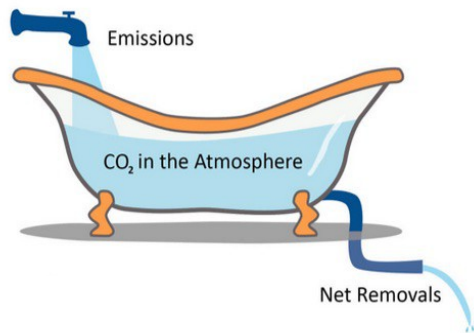
PC received £10,000 lottery grant in 2022 to help implement climate action plan :-

1. Housing stock assessment – work needed to raise all domestic dwellings to Band C energy efficiency rating – estimate of long term electricity demand
2. Rooftop solar study – potential rooftop generation capacity
3. EV charging assessment – EV charging infrastructure needed to meet ongoing growth in electric vehicles
4. Renewables assessment – potential for solar and wind generation taking account of constraints including the AONB
5. Public engagement programme – fully engage community in developing and implementing the plan

Also AONB has assessed potential for habitat improvement in the Crydda catchment

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Where is the climate emergency in 2023?  
What has changed since 2019?



- When emissions are more than removals CO<sub>2</sub> increases – bath fills - temperature rises
- Net zero is when emissions = removals – level in bath stays the same – temperature keeps rising until 2050 or later.
- If/when we reach net zero, CO<sub>2</sub> concentrations will remain high with major climate impacts like wildfires, flooding, droughts, sea-level rise
- To reduce climate impacts we need to reduce CO<sub>2</sub> level by increasing removals – lower level in the bath – sequester carbon in trees,oceans, CCS.

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## Georgeham Parish Emissions

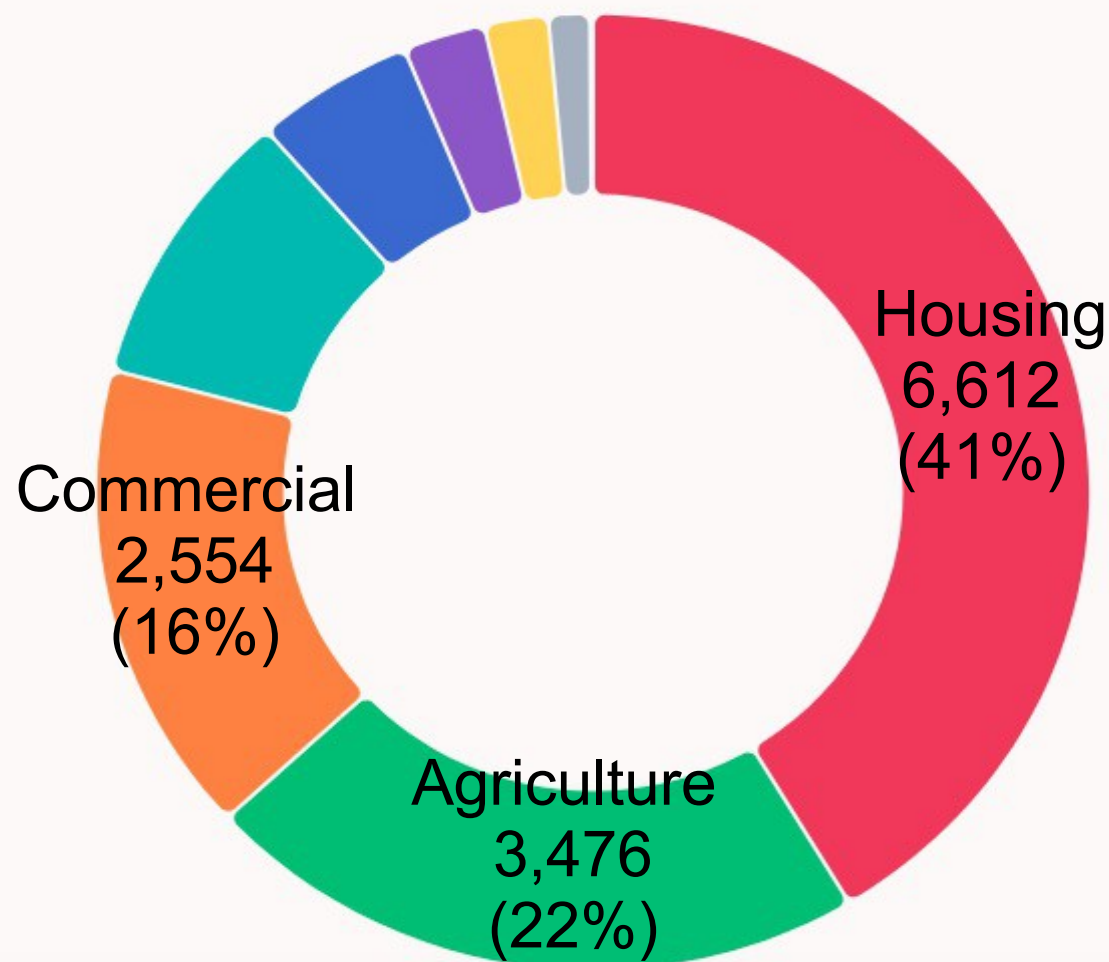
(Impact-tool.org.uk)

15,980t CO<sub>2</sub>e\*

total territorial footprint (p.a.)

### EMISSIONS BREAKDOWN (t CO<sub>2</sub>e)

Housing	6,612
Agriculture	3,478
Industrial and commercial	2,554
Road Transport	1,517
Aviation	829
F-gases	428
Shipping	330
Waste management	216
Other Transport	15
Diesel fuelled railways	0



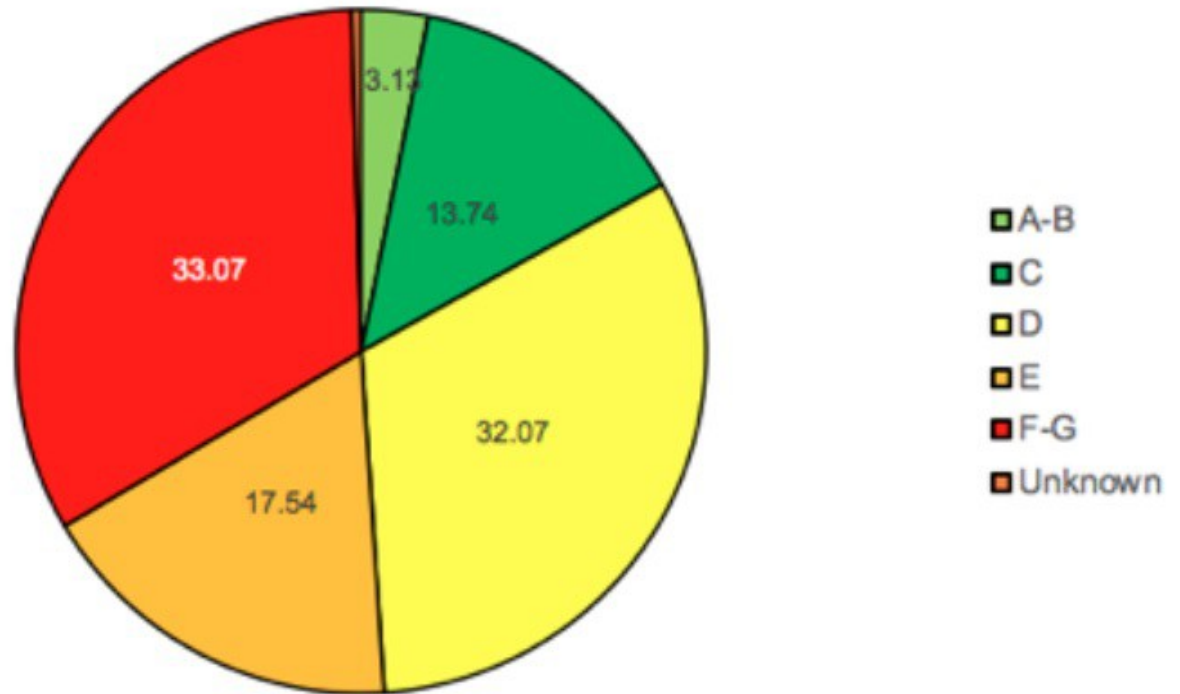
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## Housing stock analysis

% Homes by EPC rating  
(869 domestic properties)

- Band A-B = 27 properties (3%)
- Band C = 116 properties (14%)
- Band D = 279 properties (32%)
- Band E = 153 properties (18%)
- Band F-G = 294 properties (33%)

**83% of homes need upgrading to Band C**



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## Retrofit measures

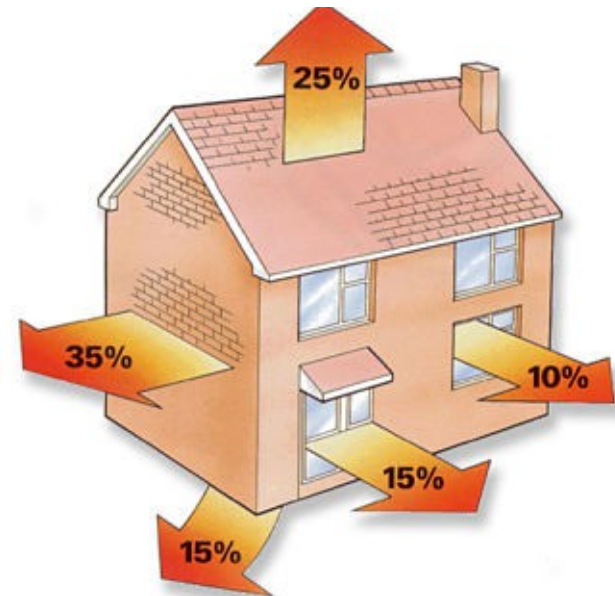
Wall Insulation – 356 homes

Floor insulation – 744 homes

Loft insulation – 868 homes (mainly upgrades)

Boiler upgrades – 737 homes

Solar PV – 469 homes suitable



**Total estimated cost = £20million  
(average = £23,000/household)**

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## Energy, CO<sub>2</sub> and cost savings

Total baseline energy use = 20.4million kWh

Total baseline emissions = 6.6million tCO<sub>2</sub>e

Total energy use post retrofit = 14.1million kWh

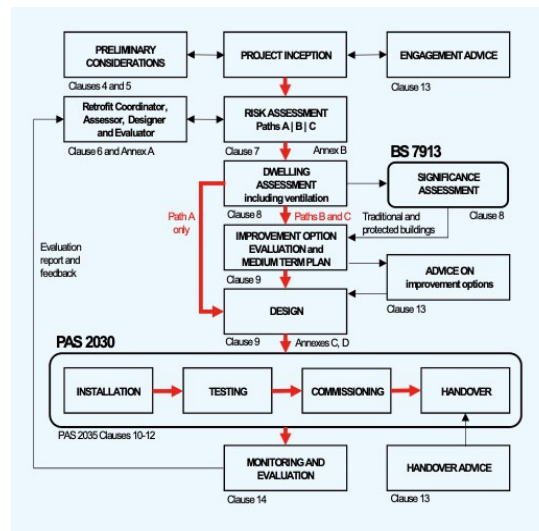
Total emissions post retrofit = 4.3million tCO<sub>2</sub>e

These figures assume that houses are all electric. The government aim to decarbonise the grid by 78% by 2035

**Total emissions after decarbonised grid = 1.1million tCO<sub>2</sub>e (83% reduction)**

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## What is retrofit?



Defined process for assessing and implementing whole house retrofit

Trained assessors and coordinators (eg 361 Community Energy)

Assessor produces report includes full EPC, ventilation and condition survey

Coordinator uses data to produce medium term improvement plan

Coordinator oversees and manages the retrofit work to ensure quality and delivery

Can we set up a retrofit service in the parish?



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## Rooftop PV assessment



Detailed mapping of rooftop solar PV

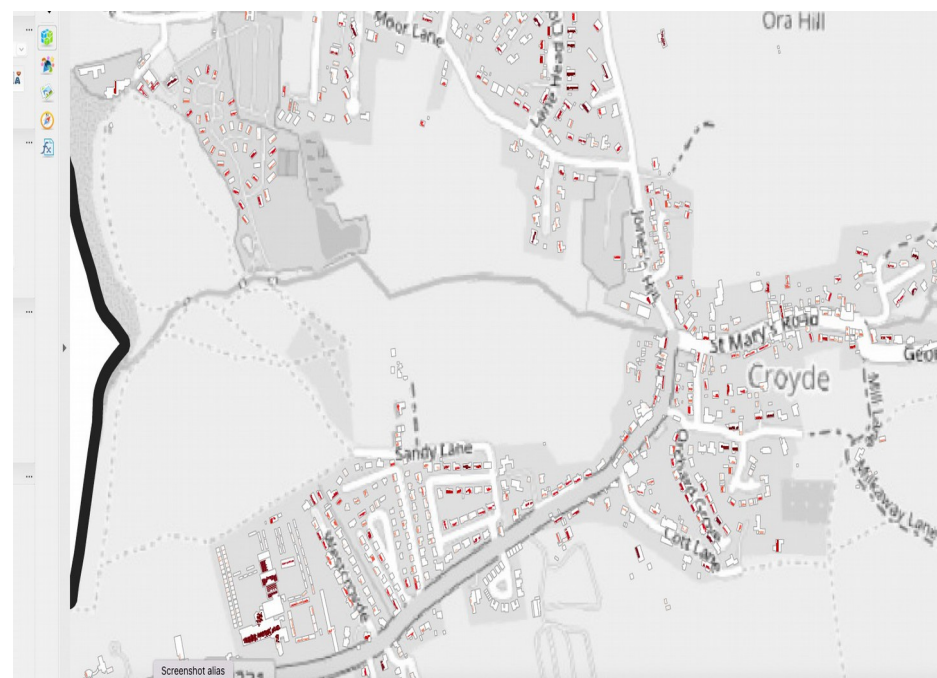
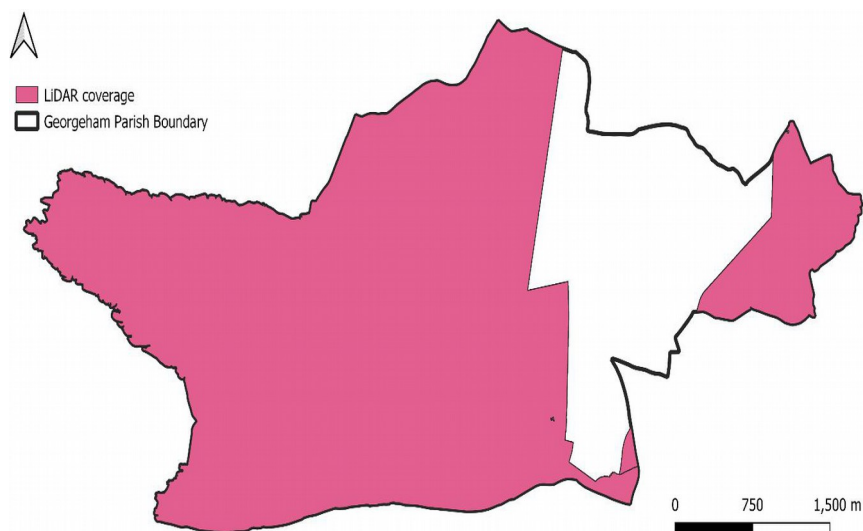
Estimate potential generation capacity

Cost benefit analysis

Evaluate each section of roofing of each building for technical and financial viability

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## Detailed mapping of rooftop PV potential



- All suitable properties have been mapped using Lidar
- Each roof is identified with potential PV capacity
- Profitability of each roof estimated with and without a battery

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## Potential electricity generation

Total capacity if all properties with PV + battery = 6.5MW

Total electricity generated/year = 5.7million kWh

This would meet 40% of the post retrofit household energy demand

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## Key outputs

75% of properties with PV and battery installed would meet 30% of future demand

Typical installation will cost £1000/kWp + £4,000 for battery ie around £8,000

Financial payback period between 5 and 15 years

Need to install around 80 roofs each year for next 10 years to meet target by 2035

Rooftop Solar PV saves 900 tCO<sub>2</sub>e or 21% of post retrofit emissions

Could a bulk buy scheme be developed for groups of properties to reduce costs?

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## Impact of Electric vehicles

Around 1000 cars and vans in the parish (1.6/household)

If 50% change to EV; electricity demand would increase by 1million kWh or 7%

Assuming grid is decarbonised then each EV saves around 2 tonnes of CO<sub>2</sub>

80% of charging is carried out at home...but

...many households do not have off street parking

**How do we encourage take up of EVs?**

**Where do we need more public chargepoints?**

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## Renewables assessment



*1.5 MW of Solar - 5 acres*



*4 MW of Solar - 12 acres*



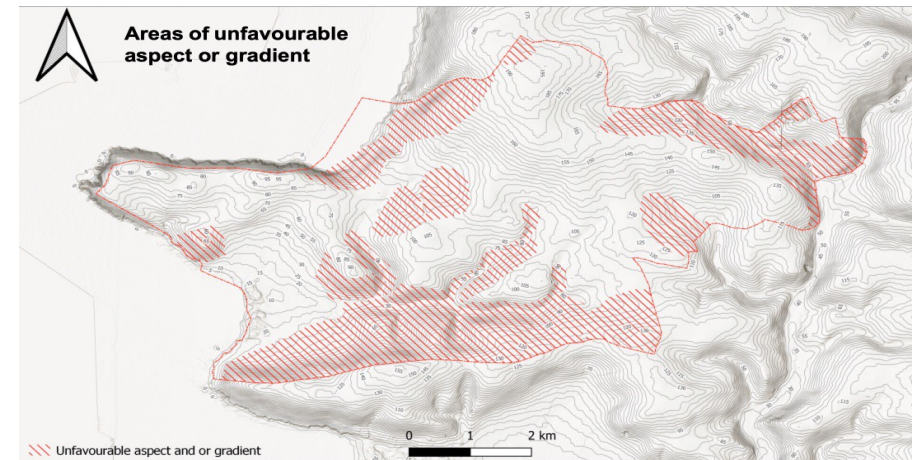
*EWT DW52 900kW Turbine - Hub height: 40-50 m*

Desktop study – no site visits made

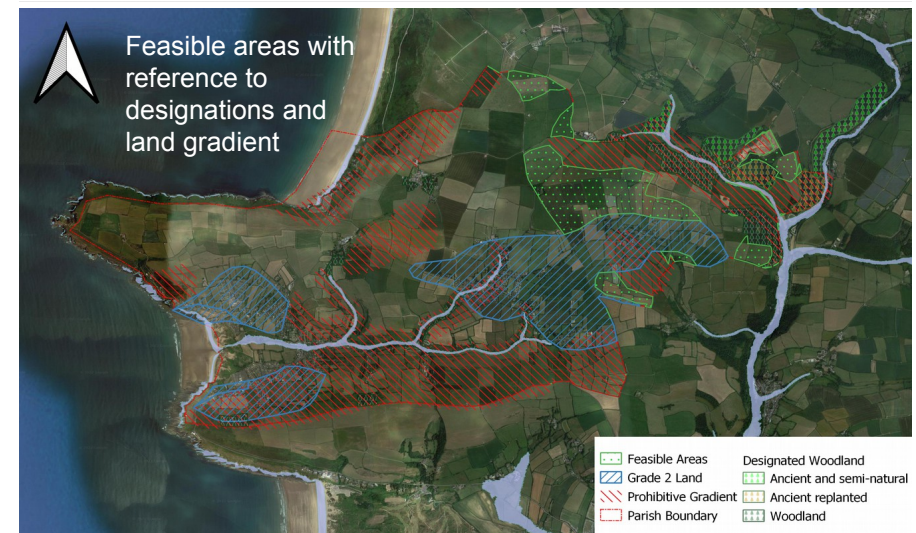
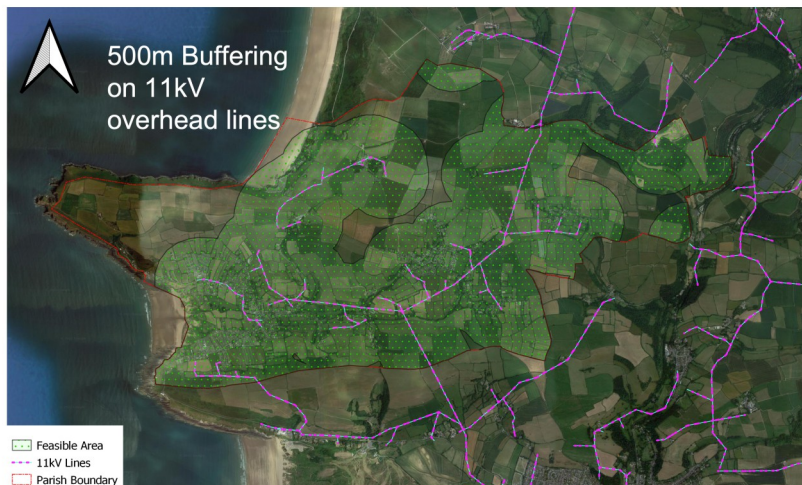
Successive constraints applied to identify suitable locations for wind and solar.

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## Applying constraints



Areas with an aspect unfavourable to solar and wind and areas that would be too steep for development have been excluded.



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## Key results

All potential sites lie north of North Buckland

Report identified 3 potential sites for a wind turbine and 10 for solar

Overall realistic potential for 2MW of wind and 4MW of solar

Potential annual generation = 10million kWh or 70% of post retrofit demand

But...are the sites financially viable?

Under current regulations only private wire schemes are viable and potential sites too far from high use locations eg Ruda.

However regulations might change in the future....Community owned generation may be available to local residents at reduced cost.

Other major constraint is lack of grid capacity

**How do we persuade residents to support community owned renewables?**



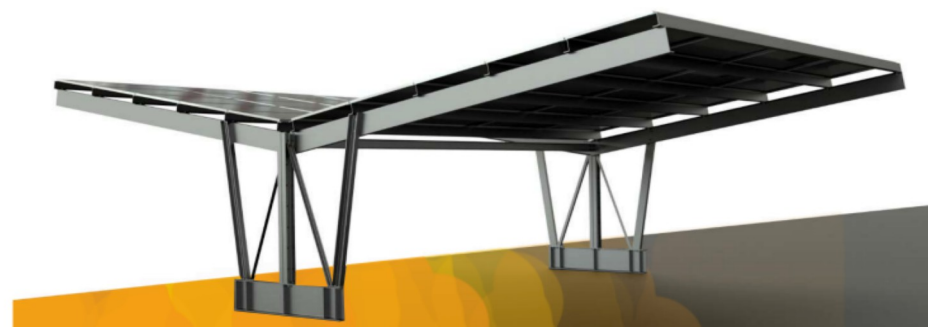
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## Solar Car Parks

Car Park	Ownership	Available Bays*
Putsborough	Putsborough Sands Ltd	70
Baggy Point	National Trust	60
Croyde Beach	Unknown	55
Down End	Downend Car Park Ltd	35

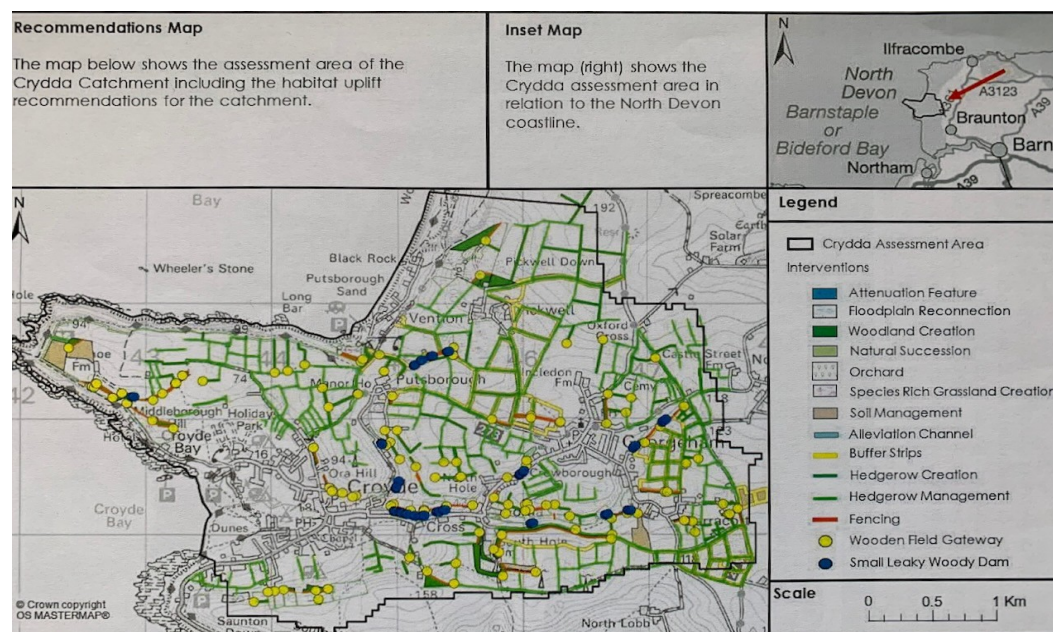
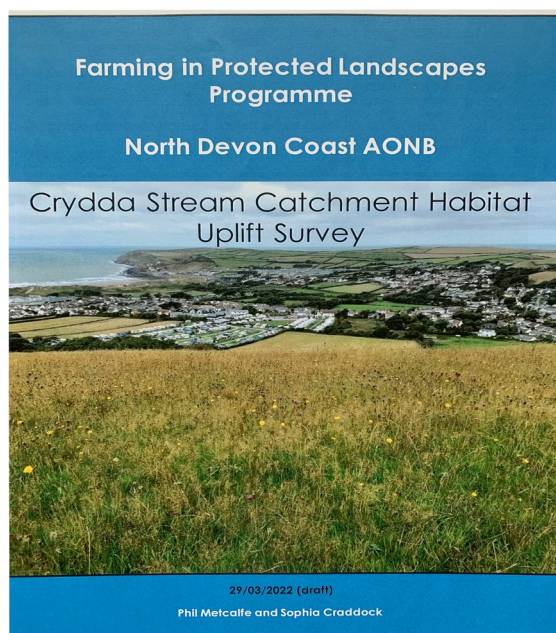
Expensive - £2000/kWp

Needs high EV usage to be viable



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## Farming and wildlife



We have a biodiversity crisis and a climate crisis

Land use is fundamental to tackling both of these.

The AONB report on the Crydda catchment highlights a number of measures that could be taken to increase biodiversity and sequester carbon.

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