



# Climate Emergency Development Plan Document

**Topic Paper: Energy and Sustainable Construction**



This is one in a series of topic papers produced to inform the preparation of the Council's Climate Emergency Development Plan Document (DPD)

<b>Topic Paper</b>
<b>Renewable energy</b>
<b>Natural climate solutions</b>
<b>Town Centres</b>
<b>Mine water energy and deep geothermal</b>
<b>Energy and Sustainable Construction</b>
<b>Coastal Change and flood management</b>
<b>One Planet Development/Alternative living</b>
<b>Transport</b>
<b>Agriculture and Rural Sustainability</b>

## Contents

<b>Executive Summary</b>	<b>4</b>
<b>What is this topic paper about?</b>	<b>5</b>
Can I comment on this topic paper?	5
<b>Introduction</b>	<b>6</b>
<b>Policy Context and Evidence</b>	<b>8</b>
National Planning Policy	8
Local Planning Policy	9
Evidence	9
<b>Future Approach</b>	<b>12</b>

## Executive Summary

Direct emissions from the Buildings sector are responsible for 18% of emissions (742 ktCO<sub>2</sub>e) (University of Exeter, 2019). There are significant opportunities to drastically reduce this figure.

The 2011 census recorded 230,400 households in Cornwall. The Cornwall Local Plan requires 52,500 homes to be built by 2030 and approximately half of these have already been completed (however, it should be noted that there is no ‘upper ceiling’). Ensuring that new buildings can both minimise contribution to and adapt to climate change is crucially important

In Cornwall, fuel poverty affects 13% of all households which is approaching 33,000 homes (BEIS, 2019)<sup>1</sup>. This is above the England average of 11%. Therefore, improving fabric standards and energy efficiency and minimising future space heating requirements is not only the most sustainable approach, but is also a crucial element of addressing fuel poverty improving social equity.

National planning policy specifically relating to energy efficiency and building standards and renewable energy is set out in Section 14 ‘meeting the challenges of climate change, flooding and coastal change’ paragraphs 148 to 153 of the NPPF. Ensuring the highest possible standard of energy and thermal efficiency from new buildings is a key element of reducing the carbon footprint of Cornwall, but local plan policy does not currently require standards higher than those of current building regulations.

Increasing numbers of Local Authorities around the UK have developed more ambitious energy policies that require additional standards beyond Building Regulations. However, Government has recently consulted on an uplift to Building Regulations and the development of a ‘Future Homes Standard’ designed to decrease the carbon footprint of new buildings. This includes proposals to restrict Local Authorities from setting their own standards. The outcome of this consultation will be critical to what can be achieved in terms of setting additional energy efficiency requirements through the DPD.

The Energy and Sustainable Construction policies have been developed with the intention of:

- Improving the energy and water efficiency of development;
- Increasing the installation of renewable energy on residential and non-residential development;
- Reducing carbon emissions from residential and non-residential buildings;
- Introducing a structured approach to offsetting residual emissions;
- Increasing the resilience and sustainability of development in Cornwall; and
- Preventing the loss of carbon storage in the natural environment resulting from development.

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<sup>1</sup> Department for Business Energy and Industrial Strategy (2019): *Sub Regional Fuel Poverty Data* [online] available at: <https://www.gov.uk/government/statistics/sub-regional-fuel-poverty-data-2019>

## What is this topic paper about?

The Council is preparing a new Plan to set the framework for dealing with climate change. This will sit underneath the Local Plan and forms the strategic framework for planning decisions. This topic paper summarises the latest available evidence on Energy and Sustainable Construction. Reflecting the wide scope of this topic there are a number of overlaps between this paper and the other papers.

To view all the topic papers and the latest update on the Climate Emergency DPD, please visit [www.cornwall.gov.uk/climatechangedpd](http://www.cornwall.gov.uk/climatechangedpd)

## Can I comment on this topic paper?

The Climate Emergency DPD topic papers are factual in nature and set out the planning policy context and current issues in Cornwall, along with potential future approach to inform policy development. There will be opportunities to comment on the content of the Climate Emergency DPD at various stages of its development. As such we are currently seeking views on these topic papers, in particular any gaps in evidence.

If you wish to be kept informed of any forthcoming consultation please email [climateemergency.dpd@cornwall.gov.uk](mailto:climateemergency.dpd@cornwall.gov.uk) with your contact details.

## Introduction

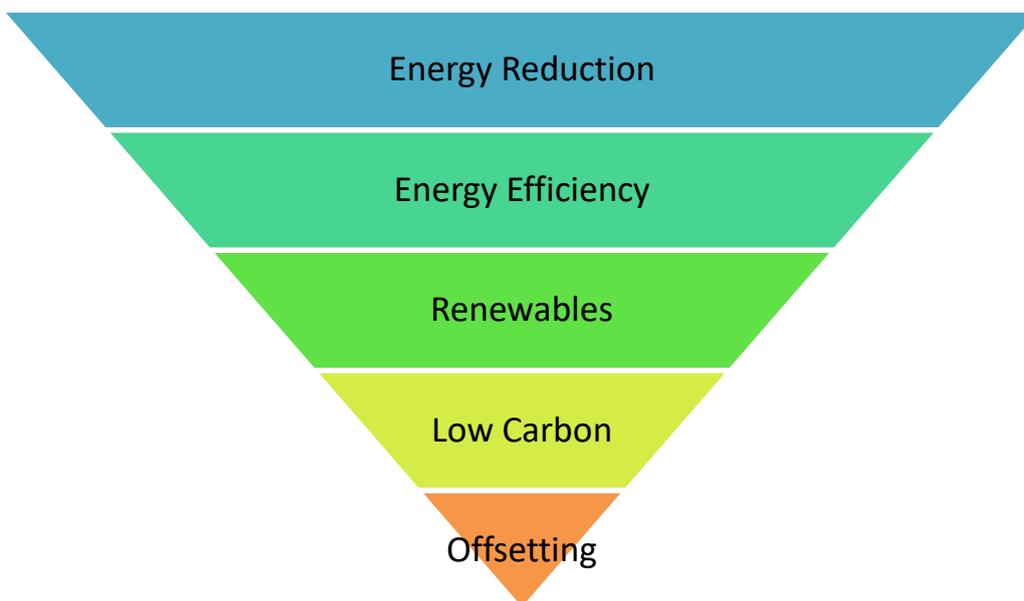
### Carbon Emissions and Fuel Poverty

Direct emissions from the Buildings sector are responsible for 18% of emissions (742 ktCO<sub>2</sub>e) (University of Exeter, 2019)<sup>2</sup>. There are significant opportunities to drastically reduce this figure. The 2011 census recorded 230,400 households in Cornwall. The Cornwall Local Plan requires 52,500 homes to be built by 2030 and approximately half of these have already been completed (however, it should be noted that there is no 'upper ceiling'). Ensuring that new buildings can both minimise contribution to and adapt to climate change is crucial.

In Cornwall, fuel poverty affects 13% of all households which is approaching 33,000 homes (BEIS, 2019)<sup>3</sup>. This is above the England average of 11%. Therefore, improving fabric standards and energy efficiency and minimising future space heating requirements is not only the most sustainable approach, but is also a crucial element of addressing fuel poverty improving social equity.

### The Energy Hierarchy

Through the draft Climate Emergency DPD, we are proposing a requirement for developments to follow the energy hierarchy (see Figure 1); that is to prioritise energy reduction and energy efficiency first, before looking at renewables/low carbon solutions and then offsetting residual carbon.



**Figure 1: The Energy Hierarchy**

<sup>2</sup> Centre for Energy and the Environment, University of Exeter (2019): *Cornwall Climate Emergency: Pathways to "Net Zero"*

<sup>3</sup> Department for Business Energy and Industrial Strategy (2019): *Sub Regional Fuel Poverty Data* [online] available at: <https://www.gov.uk/government/statistics/sub-regional-fuel-poverty-data-2019>

Intelligent design, improved building materials, insulation, energy efficient systems and appliances and renewable energy technology will not only reduce carbon emissions, but also help to address issues around fuel poverty.

A key issue is heating; the heat supply to buildings will need to be decarbonised, for example, with heat pumps or low carbon heat networks. However, the opportunities for these are likely to be limited in Cornwall.

### **Water Efficiency**

The use of water in all development has a considerable impact on carbon emissions, related to the pumping, distribution and treatment of water and sewage.

The Council could adopt through planning policy the optional higher water efficiency standard within Building Regulations Part G<sup>4</sup> for new dwellings (110 litres/person/day).

Rainwater harvesting, and greywater recycling systems may be used alongside water efficient internal fixtures (taps, baths, showers, etc.) to further reduce the demand upon mains water and the amount of water which requires treatment.

Water efficiency is also an important in terms of conserving water itself, which increasingly important with our changing climate.

### **Offsetting**

In the short term it will be challenging and expensive to achieve zero carbon buildings across the board. It is likely that carbon offsetting (using additional actions to mitigate carbon impacts and help achieve a net zero) will need to play a role to help us reach our ambitious target.

Carbon offsetting means compensating for carbon dioxide emissions arising from a development/activity, by participating in schemes designed to make equivalent reductions of carbon dioxide in the atmosphere, for example large scale tree planting projects like the [Forest for Cornwall](#)<sup>5</sup>.

Carbon offsetting could happen 'on site' including requirements for onsite renewables or planting or contributions made to a Cornwall Offset fund which could then be used to fund rewilding and afforestation projects, improvements to the insulation of older houses/buildings and support local low carbon and renewable energy projects.

### **Retrofitting**

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<sup>4</sup> Ministry of Housing, Communities and Local Government (2010): *Building Regulations: Sanitation, hot water safety and water efficiency: Approved Document G* [online] available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/504207/BR\\_PDF\\_AD\\_G\\_2015\\_with\\_2016\\_amendments.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/504207/BR_PDF_AD_G_2015_with_2016_amendments.pdf)

<sup>5</sup> Cornwall Council (2020): Forest for Cornwall Programme [online] available at: <https://www.cornwall.gov.uk/environment-and-planning/grow-nature/about/forest-for-cornwall-programme/>

Measures are also needed to address emissions from existing buildings. In a residential property this means insulating every available loft and cavity walled building, along with the majority of solid walled buildings. Much of this falls outside the remit of planning, however, there are opportunities where applications are made for change of use, conversions, reversions and extensions<sup>6</sup>.

### Sustainable Construction

The DPD provides an opportunity to further promote the principles of sustainable construction which have been highlighted in the [Cornwall Design Guide](#)<sup>7</sup>. Sustainable Construction is important to our approach to climate change, but also has many other environmental, social and economic benefits. We should be achieving the highest standards of sustainable design and construction in Cornwall to improve the environmental performance of new developments, minimising contribution to climate change and adapting to the effects of climate change over their lifetime.

## Policy Context and Evidence

### National Planning Policy

National planning policy specifically relating to energy efficiency and building standards and renewable energy is set out in Section 14 'meeting the challenges of climate change, flooding and coastal change' paragraphs 148 to 153 of the [NPPF](#)<sup>8</sup>.

The [Climate Change Act](#)<sup>9</sup> commits the UK government to reducing greenhouse gas emissions by at least 100% of 1990 levels (net zero) by 2050. The Government expects each local authority to contribute to meeting the targets and reducing overall demand for energy. In January 2019, Cornwall Council declared a '[climate emergency](#)' in recognition of the need to take urgent action<sup>10</sup>.

Planning plays an important role in minimising our contribution to/increasing resilience to the effects of climate change. It can provide a positive and encouraging framework for change and can resist harmful development.

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<sup>6</sup> The Carbon Neutral Cornwall team is leading a retrofit project for houses managed by Cornwall Housing. This is outside of the remit of planning policy but is a good example of other important work in this area <https://www.cornwall.gov.uk/environment-and-planning/climate-emergency/our-action-plan/what-is-cornwall-council-doing/whole-house-retrofit/>

<sup>7</sup> Cornwall Council (2020): *Cornwall Design Guide* [online] available at:

<https://www.cornwall.gov.uk/environment-and-planning/planning/planning-policy/adopted-plans/planning-policy-guidance/cornwall-design-guide/>

<sup>8</sup> Ministry of Housing, Communities and Local Government (2019): *National Planning Policy Framework* [online] available at:

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/810197/NPPF\\_Feb\\_2019\\_revised.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF_Feb_2019_revised.pdf)

<sup>9</sup> UK Government (2008): *Climate Change Act* [online] available at:

<https://www.legislation.gov.uk/ukpga/2008/27/section/1>

<sup>10</sup> Cornwall Council (2019): *Climate Emergency Declaration* [online] available at:

<https://www.cornwall.gov.uk/environment-and-planning/climate-emergency/>

Ensuring the highest possible standard of energy and thermal efficiency from new buildings is a key element of reducing the carbon footprint of Cornwall, but local plan policy does not currently require standards higher than those of current building regulations.

Increasing numbers of Local Authorities around the UK are developing more ambitious energy policies. However, a recent [government consultation](#) on the implementation of the Future Homes Standard and uplift to Building Regulations proposed, whilst improving standards will also seek to restrict Local Authorities from setting their own energy efficiency standards<sup>11</sup>.

Cornwall Council provided a thorough [response](#) to this consultation, which can be found on our website<sup>12</sup>. The outcome of this consultation is pending but will be critical to what can be achieved in terms of energy efficiency requirements through the DPD. However, we are proceeding with developing our more ambitious energy efficiency policies and requirements that address the carbon gap between Building Regulations and carbon neutral for buildings until the national picture is clear.

## Local Planning Policy

The [Cornwall Local Plan](#)<sup>13</sup> promotes sustainable development and currently contains four policies with direct relevance:

- Cornwall Local Plan
  - Policy 1 - Presumption in Favour of Sustainable Development
  - Policy 12 - Design
  - Policy 13 - Development Standards
  - Policy 16 - Health and wellbeing
- [Cornwall Design Guide](#)

## Evidence

### Energy

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<sup>11</sup> Ministry of Housing, Communities and Local Government (2020): *Consultation on the Future Homes Standard: changes to Part L and Part F of the Building Regulations for new dwellings* <https://www.gov.uk/government/consultations/the-future-homes-standard-changes-to-part-l-and-part-f-of-the-building-regulations-for-new-dwellings>

<sup>12</sup> Cornwall Council (2020): *Uplift to Building Regulations/new Future Homes Standard, summary and technical response* [online] available at: <https://www.cornwall.gov.uk/council-and-democracy/government-policy-consultations/> (response can be found under the Housing and Planning section)

<sup>13</sup> Cornwall Council (2016): *Local Plan Strategic Policies 2010 – 2030* [online] available at: <https://www.cornwall.gov.uk/media/22936789/adopted-local-plan-strategic-policies-2016.pdf>

The response to the scoping report proposals was generally supportive with a strong message to go further. We have to balance what we require with viability<sup>14</sup> and against the backdrop of an uncertain national picture (i.e. the outcome of consultation discussed previously). We have developed draft policy wording for energy and carbon reduction based on the principles outlined in the new Cornwall Design Guide (Climate Change and Community Resilience: Outcomes RESOURCE 1 and 2) and on the advice and guidance provided by the UK Green Building Council, which has in turn been collated based on their extensive work with a range of stakeholders including developers and local authorities across the UK<sup>15</sup>. We also sought advice from the South West Energy Hub<sup>16</sup> on our approach. We are continuing to work with the Carbon Neutral Team and University of Exeter to understand the current and future energy needs for Cornwall, including opportunities to reduce energy needs.

### Water

Our water efficiency draft policy wording is based on the principles outlined in the new Cornwall Design Guide (Climate Change and Community Resilience: Outcome RESOURCE 3) and on the optional higher water efficiency standards within Building Regulations Part G for new dwellings (allowed to be incorporated as a requirement into planning policies through the Optional Technical Standards). We are proposing the requirement not primarily on the basis of water stress, but on energy use and therefore carbon footprint. However, water stress is clearly an important issue and is also the reason for which this optional standard is proposed by MHCLG. To successfully adopt this standard, Cornwall Council will continue to work with the Environment Agency to demonstrate that there is a need for this additional requirement as per the Housing Guidance<sup>17</sup>.

### Offsetting

As outlined in the introduction, in the short term it will be challenging and expensive to achieve zero carbon buildings across the board due to a myriad of reasons, including viability, technology, skills and supply chains. As such, it is likely that carbon offsetting will need to play a role to help us reach our ambitious target. Although there are criticisms of carbon offsetting, there are also many benefits in addition to carbon emission reduction. This obviously depends on the offset project type, but they can bring many socio-economic and environmental benefits as well.

At this stage it is anticipated that offsetting could take a range of forms, ideally onsite in the first instance, or if not, a contribution to a Cornwall Offset Fund which could be used to fund a range of projects: from rewilding and afforestation to retrofitting and renewables.

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<sup>14</sup> If we require higher energy efficiency standards, we need to provide evidence that the requirements are viable. That is, that the policy requirements for development set out within the DPD do not threaten the ability of the sites and scale of that development to be developed viably.

<sup>15</sup> UK Green Building Council (2019): *Policy Play Book* [online] available at: <https://www.ukgbc.org/wp-content/uploads/2020/03/The-Policy-Playbook-v.1.5-March-2020.pdf>

<sup>16</sup> South West Energy Hub <https://www.westofengland-ca.gov.uk/south-west-energy-hub/>

<sup>17</sup> Ministry of Housing, Communities and Local Government (2015): *Housing: optional technical standards* <https://www.gov.uk/guidance/housing-optional-technical-standards#water-efficiency-standards>

On their website, The Circular Ecology (an environmental consultancy specialising in offsetting) state that in order for offsetting to have credibility, it must be:

- Additional – ensuring that the carbon reduction is real and permanent
- Verified – proving assurance on the quality and credibility of the credits
- Traceable – transparent and providing proof of the offset<sup>18</sup>

It will be vitally important for us to ensure that these elements are demonstrated, whether offsetting is onsite or through a Cornwall Offsetting Fund.

### **Retrofit**

As explained in the introduction section, there are limited opportunities to encourage retrofitting of existing buildings through the DPD, primarily where applications are made for change of use, conversions, reversions and extensions.

A key issue for the DPD is to promote retrofitting where possible, but to also be mindful of other issues. Often, there can be conflicts between energy efficiency/renewable technology and preserving our historic environment/heritage. Therefore, where improvements relate to historic buildings, we want to encourage applicants to refer to Cornwall Council's '[Improving Energy Efficiency in Historic Cornish Buildings](#)'<sup>19</sup> guidance (or any subsequent revision).

### **Sustainable Construction**

The scoping consultation response gave a clear message that people want us to look at wider sustainability issues. We are keen to do this while not drifting outside of the 'climate emergency' scope. Our draft approach to sustainable construction is based primarily upon emphasising relevant, important elements of the Local Plan (e.g. best use of land) and drawing out key point from the new Cornwall Design Guide (Climate Change and Community Resilience: Outcomes RESOURCE 4 and 5; Liveable Homes: Outcome EXTERNAL 2).

There are elements that were included in early iterations of the draft policy such as green infrastructure, connectivity, active travel, flooding and drainage, however, due to duplication, these elements were amalgamated into other sections of the DPD.

### **Further work/enhanced evidence needs**

If these policies are generally supported following the pre-submission consultation, there will be further work needed to support them and, in some instances, to develop them further. This includes:

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<sup>18</sup> The Circular Ecology (2020): *Carbon Offsetting* [online] available at: <https://circularecology.com/carbon-offsets.html>

<sup>19</sup> Cornwall Council (2016): *Improving Energy Efficiency in Historic Cornish Buildings* [online] available at: <https://www.cornwall.gov.uk/media/2277783/improving-energy-efficiency-in-cornish-buildings-camborne-thi-nov-16.pdf>

- **Carbon Calculator development work** – A carbon calculator will need to be developed support these policies and their delivery.
- **Energy Statement Template** – An energy statement form/template will need to be developed to support these policies and their delivery
- **Water Efficiency** – work with the Environment Agency to demonstrate the need for adopting the lower water consumption standard on new development
- **National Policy approach/Deregulation Act** - The outcome of the consultation on changes to Building Regulations and Future Homes Standard is of crucial importance. This consultation proposed to remove the ability of Local Authorities to require higher energy efficiency standards. Going forward we require clarification from the government on our ability to increase energy standards In Cornwall through the DPD whether proposed restrictions would apply to requiring offsetting/allowable solutions and the potential to close the gap between building regulations and carbon neutral.
- **Smaller developments** – around 35% of applications in Cornwall are for smaller scale developments, for which parts 1i - iii of the policy would not apply. The reason we have not included smaller developments in these enhanced requirements is due to issues around viability. Smaller developments will still be required to follow the energy hierarchy, but not achieve the more ambitious requirements of parts 1i – iii. However, as 35% of development in Cornwall will fall into this bracket, this does limit the effectiveness of the policy. Can we do more?
- **Viability** - If we require higher energy efficiency standards, we need to provide evidence that the requirements are viable. That is, that the policy requirements for development set out within the Climate Emergency DPD do not threaten the ability of the sites and scale of that development to be developed viably (the draft policy is being assessed by specialist consultants).
- **Carbon Offsetting fund for Cornwall** - further work will be needed to develop this in terms of partners, process, governance, projects, priorities etc

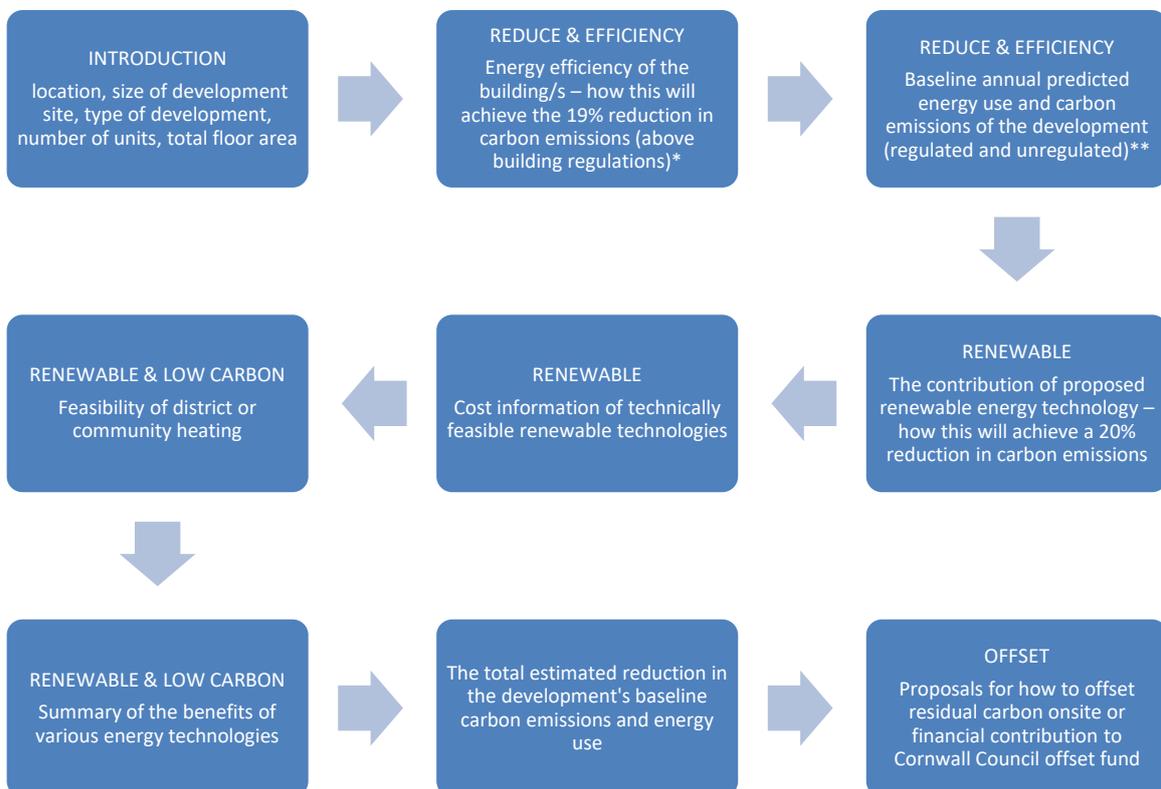
## Future Approach

The Energy and Sustainable Construction policies have been developed with the intention of:

- Improving the energy and water efficiency of development;
- Increasing the installation of renewable energy on residential and non-residential development;
- Reducing carbon emissions from residential and non-residential buildings;
- Introducing a structured approach to offsetting residual emissions;

- Increasing the resilience and sustainability of development in Cornwall; and
- Preventing the loss of carbon storage in the natural environment resulting from development.

If we are to meet our target of being carbon neutral by 2030, it is essential that new development minimises carbon emissions by adopting the energy hierarchy<sup>20</sup>. In order to ensure this is delivered, we are proposing to introduce a requirement that an Energy Statement be required for major planning applications (full planning application and reserved matters)<sup>21</sup>. This is a requirement that is specified by increasing numbers of Local Authorities across the UK. If the proposed policy is taken forward, this will require a template/format for the Energy Statement to be completed by developers to accompany their planning application. It is envisaged that the Statement will include the information outlined in Figure 2.



<sup>20</sup> The proposed changes to Building Regulations and the new Future Homes Standard also included reducing the ability of Local Authorities to set their own energy efficiency targets. At the time of writing, the outcome of this consultation is unknown. The outcome will have a significant impact on what Cornwall Council are able to achieve through the Climate Emergency DPD and on our ability to meet the ambitious net zero target by 2030.

<sup>21</sup> Outline planning applications could be required to produce an energy strategy to inform the design of the development. This would be expected to look at all sections of the energy hierarchy.

**Figure 2 – Draft proposed contents of Energy Statement**

*\*This is dependent on the outcome of the national consultation on the uplift to Building Regulations and the proposed Future Homes Standard*

*\*\* Differentiation between carbon emissions and energy efficiency*

**Other Policy Options**

- Develop mandatory Sustainability Checklist for all new development
- Require external sustainability standard (e.g. BREEAM, elements of the former Code for Sustainable Homes)
- Amalgamate net gain, natural carbon storage and offsetting into one policy/calculation