

CAMBRIDGESHIRE HORIZONS

Agenda Item No: 13

Delivering Low Carbon Infrastructure

To: **Cambridgeshire Horizons Board**

Date: **1st July 2010**

From: **Delivery Manager : Sheryl French**

Purpose: **FOR DECISION**

This paper:

- Summarises the key issues affecting the delivery of low carbon infrastructure;
- Describes the proposed work programme for decarbonising new buildings;
- Reports progress on the Carbon Offset Fund (COF), Low Carbon Development Initiative (LCDI), Renewable Energy Infrastructure Plan (REIP) and Cost Benefit Analysis for new Public Buildings (CBA), and;
- Explains how these projects fit together

Recommendation: The Board is invited to:

- **Decide** whether we should seek to influence the definition of 'Allowable Solutions' for low carbon development so that it includes contributions to local carbon offset funds, and investment in retrofit projects for existing buildings;
- **Agree** that the Cambridge City/ARU Energy Project and St.Neots Renewable Energy Project should join the Low Carbon Development Initiative (LCDI)
- **Agree** that Horizons coordinates work on a Renewable Energy Infrastructure Plan (REIP)
- **Note** progress on the four low carbon projects described and their interrelationship

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1.0 INTRODUCTION

1.1 The low carbon agenda is a fast developing, complex and changing area. All Partners are developing understanding of what is needed to move to a low carbon economy. The Coalition Government has stated that this Government will be the greenest ever, and the scale of the growth agenda in Cambridgeshire provides opportunities for us to be one of the leading parts of the country in taking this agenda forward.

1.2 This paper summarises some of the work Horizons is engaged in, with partners, to try to help Cambridgeshire make the transition to a low-carbon economy. It also asks the Board to agree that we take specific elements of work forward, all designed to help us achieve the overall aim of reducing our carbon footprint.

2.0 Background

2.1 In September 2008, Cambridgeshire Horizons received a report on ¹Climate Change. The report considered the international, national and local Climate Change policy position, described the key findings and recommendations arising from the Carbon Appraisal of the Long Term Delivery Plan, and put forward an action plan.

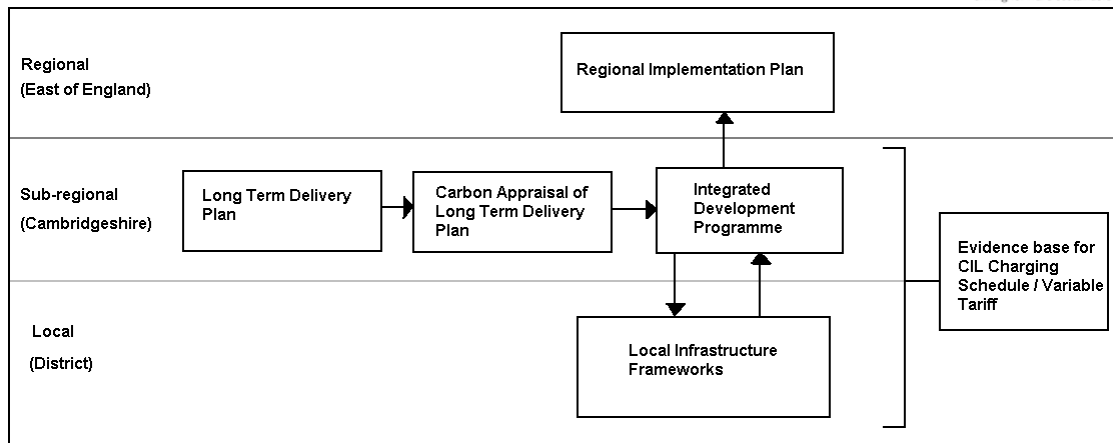
2.2 A further report was taken to Horizons Board in ²September 2009. This Report described the implications of the Carbon Reduction Commitment; the opportunities and risks relating to the delivery of new public buildings to zero carbon standards and shared progress on the investments being made to implement key recommendations arising from the Carbon Appraisal of the Long Term Delivery Plan (CALTDP June 2008) approved in 2008 and included in the Climate Change Action Plan 2008.

2.3 In December 2009, the Integrated Development Programme (IDP) was approved by Horizons Board as the strategic infrastructure plan for Cambridgeshire. It brought together the challenges of economic growth, housing delivery and climate change and created a platform to help support the decarbonisation of strategic infrastructure in Cambridgeshire. (p45, IDP)

2.4 Diagram 1 identifies the relationship between the Carbon Appraisal of the LTDP, the Integrated Development Programme and Local Infrastructure Frameworks.

¹ 17th September 2008, Horizons Board, Agenda Item 13, Climate Change Report and Action Plan

² 24th September 2009, Horizons Board, Agenda Item 15, Delivering Zero Carbon Buildings



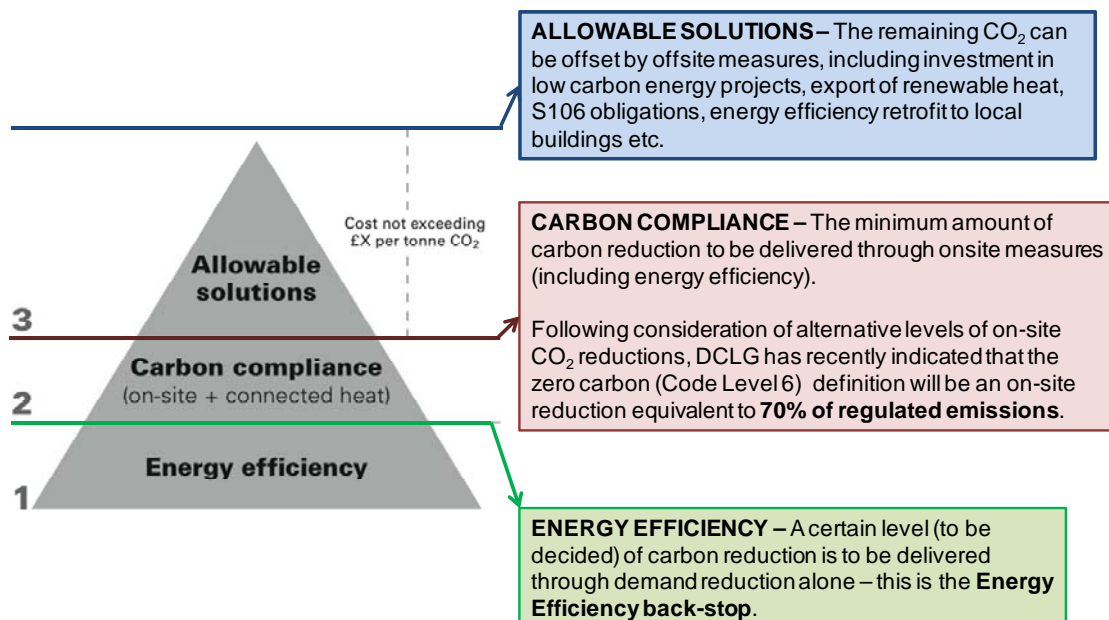
3.0 National Policy Context

3.1 There are three main areas of Government policy that seem likely to influence the future provision of low carbon buildings including:

- a) The new definition of zero carbon for new homes;
- b) The Renewables Obligation, Feed-In-tariffs and the Renewable Heat Incentive (all designed to incentivise low carbon electricity and heat production), and;
- c) The New Energy Bill for 2010 promoted by the Coalition Government.

a) Definition of Zero Carbon

3.2 Diagram 2 below describes the new definition of zero carbon for new homes.



3.3 This diagram recognises both the technical and cost difficulty of delivering zero carbon wholly onsite for some developments and introduces the concept of ‘allowable solutions’. The range of allowable solutions is still to be fully worked up and the Carbon

Offset Fund draft report identifies how Cambridgeshire public sector agencies may wish to influence this.

b) Feed in Tariffs/ Renewable Heat Incentive

3.4 The opportunity of Feed In Tariffs to incentivise small scale (less than 5MW) low carbon electricity was introduced by the Department of Energy and Climate Change (DECC) using powers in the Energy Act 2008. Feed-in tariffs work alongside the Renewables Obligation (RO), which will remain the primary mechanism to incentivise deployment of large-scale renewable electricity generation, and the proposed Renewable Heat Incentive (RHI) which will incentivise generation of heat from renewable sources at all scales. Renewables East and the Low Carbon Development Initiative (LCDI) are working with public sector partners to encourage the take up of FITs. Further detail is in Appendix B.

c) New Energy Bill 2010

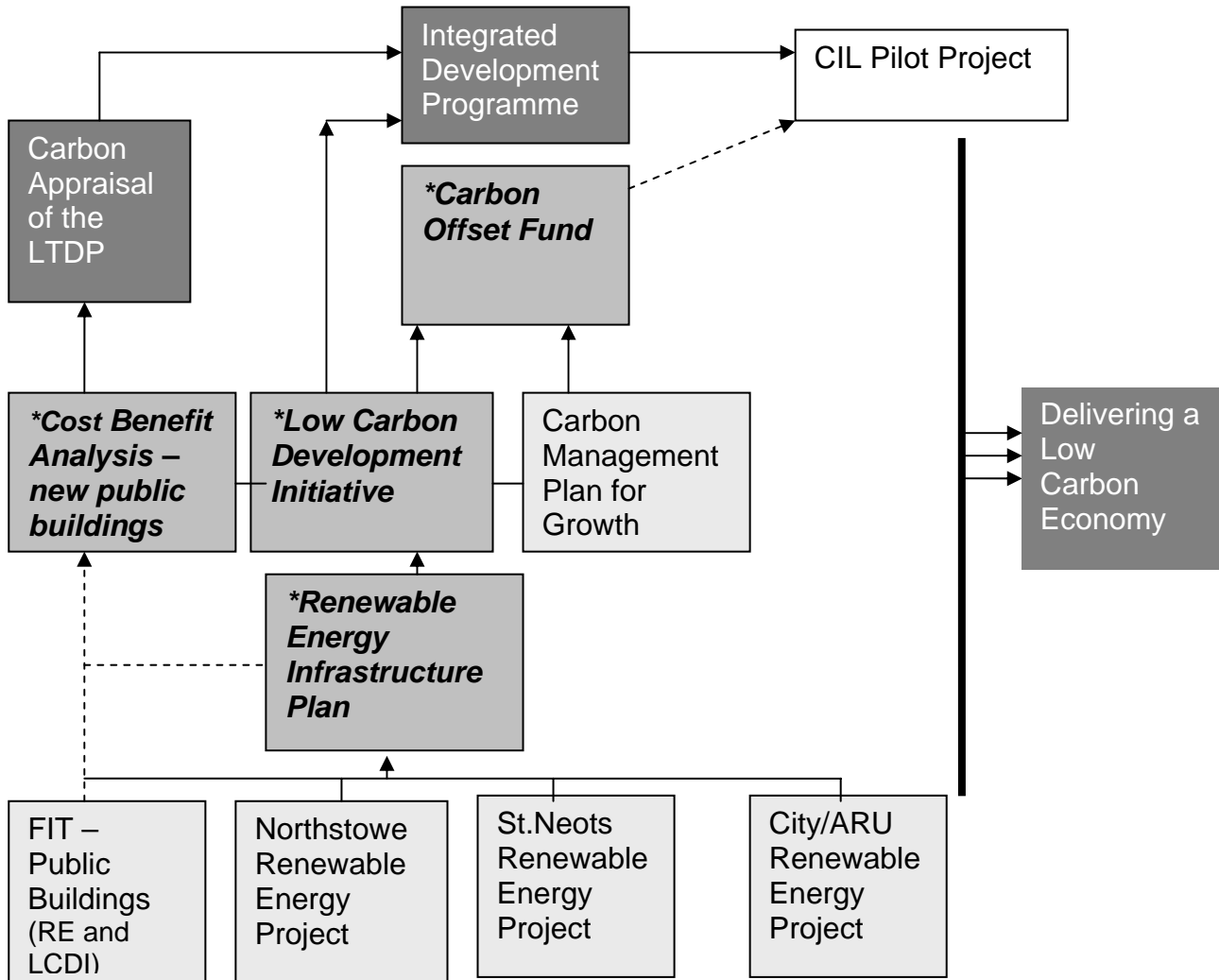
The Coalition Government is promoting a new Bill which will:

- provide a national programme of energy efficiency measures to homes and businesses
- reform energy markets to deliver security of supply and ensure fair competition
- a framework to guide the development of a smart grid to manage supply and demand of energy

4.0 Decarbonising new buildings – an emerging framework for Cambridgeshire

A programme of work to decarbonise infrastructure, with a focus on delivering new buildings to zero carbon standards, has developed over the last couple of years and is

illustrated in diagram 3 below.



The elements marked with an *asterisk in the above framework are briefly explained in the sections below.

Carbon Offset Fund

4.1 As discussed at the last Board meeting, a ‘carbon offset mechanism’ is a financial instrument that aims to reduce greenhouse gas emissions at the lowest monetary cost. Essentially, it receives payments from organisations that cannot affordably cut their emissions, and spends them on projects that can. Carbon offset mechanisms have been established around the world at a range of scales, including the EU Emission Trading Scheme (EU ETS) and a range of national voluntary schemes managed by social enterprises.

4.2 The key reason for investigating the opportunity of a Carbon Offset Fund is linked to ‘Allowable Solutions’, as promoted by the government as part of the zero carbon definition. The current ‘Allowable Solutions’ proposed include the export of renewable energy to other developments, installation of energy efficient appliances and payments into a national Carbon Offset Fund. Given the current emphasis on localism and decentralisation,

Delivering a Low Carbon Economy

it is important to influence the range of 'allowable solutions' to ensure that funds can be kept and spent locally, on projects within the county. There is also some debate on whether allowable solutions should include investments in energy efficiency measures for existing stock. The Coalition Government has stated that they will provide a final definition of zero carbon shortly, which will clarify this situation.

4.3 The potential scale of funding that can be generated between 2017/18-2021/22 through 'allowable solutions' in Cambridgeshire (based on the current Housing Growth strategy to 2021) is in the region of £100 million. A Carbon Offset Fund could potentially attract wider funding than just that generated by Allowable Solutions, so it is important to ensure that any Fund design is sufficiently flexible to allow this to happen. But as currently envisaged, its core business would be to facilitate development by collecting contributions from developments that cannot entirely eliminate their carbon dioxide emissions, with a key ambition of developing community scale renewable energy infrastructure solutions.

More detail is included in Appendix A on the Carbon Offset Fund including the draft Executive Summary

Renewable Energy Infrastructure Plan (REIP)

4.4 A Renewable Energy Infrastructure Plan would build on the work already set out in the Integrated Development Plan, and provide a framework for drawing investment into the delivery of renewable energy infrastructure for Cambridgeshire. The key reasons for preparing a REIP include:

- To maximise the potential benefits to be drawn from the existing strategic alignment between the County Council and Donarbon (waste operator) of a closed loop energy-waste-transport solution for Cambridgeshire. Currently biomass supply (including Refuse Derived Fuel) is a barrier to the delivery of low carbon renewable energy options for our major growth sites. This provides an opportunity to key issues and solutions.
- To serve as an evidence base for the proposed introduction of the Community Infrastructure Levy by Cambridgeshire local authorities – this would allow for the identification of the community scale or strategic Renewable Energy Infrastructure needed to meet low-carbon development aims, which would then allow the collection of developer contributions as part of the funding solution for such projects
- To inform ongoing development of local development frameworks – creating the policy platform for renewable energy infrastructure investment
- To inform the proposed Carbon Offset Mechanism that will enable delivery of more flexible sources of low carbon infrastructure investment
- To complement the Low Carbon Development Initiative (LCDI) ³ to bring forward renewable energy projects that the market will invest in.

4.5 Cost Benefit Analysis of delivering zero carbon public buildings

The Carbon Appraisal of the LTDP identified that 600,000m² of new public buildings would be built as part of the growth agenda. Subsequently this is identified as 41 public buildings that will be built in advance of zero carbon standards. The aim of this project is to identify, through the assessment of whole life cycle costs, if it is prudent for the public sector to invest upfront in delivering these buildings to zero carbon standards to save in the longer term. The study will also provide guidance on a zero carbon specification for new buildings.

The aims and objectives of this project are attached as appendix B.

The Low Carbon Development Initiative (LCDI)

4.6 The purpose of the Low Carbon Development Initiative (LCDI) is to overcome the early-stage development risks currently hindering progress on delivering low carbon developments and provide the expertise and knowledge to support public sector partners deliver renewable energy projects.

4.7 A regional-scale special purpose vehicle (SPV) has been established as a Community Interest Company, a wholly owned subsidiary of Renewables East. The purpose of the LCDI-SPV is to address market failure through public intervention by mitigating barriers and creating solutions the market can invest in.

4.8 The European Programmes Strategy Group (ERDF) agreed to allocate a total investment of £2.6m ERDF to support 4 or 5 projects under the LCDI programme and Cambridgeshire is match funding £1million HGF capital into the scheme alongside investment from Dacorum Borough Council.

Please see Appendix C for further details on the Local Carbon Development Initiative and Appendix D the project proposal from Renewables East to take forward the Feed in Tariff through the provision of photovoltaics on Public Buildings.

5.0 Progress Update on Projects

5.1 Carbon Offset Fund Project

- A draft report has been produced by the consultants Element Energy. Sustainability Officers from across the public sector have provided initial feedback on the draft report and an updated report discussed at the Environmental Sustainability Partnership on 29th June 2010.
- The Executive summary of the report is attached at Appendix A and a copy of the draft report is available upon request.
- A briefing session for Members and Officers is being organised for the third week of July 2010 to present the findings of the Carbon Offset Fund with a questions and answers session.

- The current timetable is to complete the work on this phase over the summer and present the findings and recommendations to Horizons Board in September 2010 with a view to agree the next steps.

5.2 Renewable Energy Infrastructure Plan (REIP)

- A bid to the Climate Change Skills fund was submitted in May 2010 to help support the development of this plan with stakeholders and to match fund the project.
- The outcome of this Funding Stream is not yet clear. We anticipate greater clarity at the end of June 2010.
- Some work on the scope of the plan was started in 2009. This work will need to be revisited and the intention is to bring forward the scope to Horizons Board in September 2010 for comment. The plan will also draw on work already being carried out by Local Authorities, such as Cambridge City Council's 'Decarbonising Cambridge' study and the joint Cambridge and South Cambridgeshire Infrastructure Study.

5.3 Progress on the Cost Benefit Analysis Project

- Consultants Cyril Sweet and Partners (including AECOM) were appointed April 2010 to undertake the cost assessment. An inception meeting has taken place and work is now underway. The two case study buildings include Orchard Park School and Sackville House, Cambourne. The design teams of the two buildings are cooperating as well as the school, landlord and tenants of Sackville House.
- The work is due to be completed in September 2010 and reported to Horizons Board with a recommendation on the costs.
- The study will provide evidence to underpin a potential change of Local Authority policy to support zero carbon public buildings, allowing each Local Authority to decide whether to make such a change.

5.4 Low Carbon Development Initiative (LCDI)

- A Community Interest Company was established December 2009.
- A revised draft business plan developed for Northstowe is to be presented to Local Authority Senior Officers and the HCA before presenting to the Northstowe Delivery Board 19th July 2010 for comment.
- Two further Cambridgeshire projects identified by Partners to work with the LCDI including St.Neots Renewable Energy Project and the Cambridge City Energy Project. Horizons Board is being asked to endorse the recommendation in section 6.0 to include the St.Neots and Cambridge City projects into the LCDI.
- A project promoting the uptake of the Feed In Tariff through the provision of photovoltaics on public sector buildings. Please see appendix D for further details of the project promoted by Renewables East and the LCDI.

6.0 Recommendation

As described on the front page.

Appendix A

CARBON OFFSET FUND

The principle of reducing emissions at lowest cost supports the challenge of delivering ambitious and binding CO₂ reduction targets, significant housing growth to meet the Code for Sustainable Homes within an economic environment of reduced public sector funding and fiscal restraint.

To deliver cost effective low carbon solutions, as with non-renewable energy generation methods, renewable energy or energy efficiency is more economic when scaled up. A Carbon Offset Fund will look to invest in community scale renewable energy/ energy efficiency infrastructure to deliver the CO₂ savings that smaller development sites can not reasonably achieve.

The Renewable Energy Infrastructure Plan (REIP) and the Low Carbon Development Initiative (LCDI) are important to the future development and implementation of a Carbon Offset Fund. Together they will identify the renewable energy infrastructure opportunities in Cambridgeshire and develop projects in which the COF and the market can invest. For example, the LCDI can act as one of the delivery arms for the COF alongside the property company promoted as part of the Making Assets Count initiative and other delivery vehicles that are planned or currently exist.

Making Assets Counts (MAC) is an initiative that draws together all the public sector assets to identify how they can be best used and managed to generate carbon and revenue benefits e.g. anchor loads for renewable energy schemes or generating renewable energy such as the work undertaken by County on wind farms.]

EXECUTIVE SUMMARY, Carbon Offset Fund Report, May 2010

Summary

This study explores the role that a Carbon Offset Fund (COF) could play in delivering low carbon growth within Cambridgeshire. The COF provides a mechanism to collect investment in carbon reduction from developers of new developments within Cambridgeshire and channel it into those low carbon energy projects that are most cost-effective and deliver the greatest benefit to the region.

Delivering high levels of carbon reduction in certain types of sites can be technically very challenging and highly costly. The operation of a COF allows developers of those sites where high levels of carbon reduction are difficult to achieve to pay into a fund, effectively to purchase offset credits, rather than meet their whole carbon reduction obligation through onsite measures. The COF is then able to pool these payments and invest the funds that accrue into priority carbon reduction projects in the region.

Cambridgeshire is expected to experience significant growth in the coming decades. This growth will be split between a limited number of large developments and a dispersion of

many small sites. The large developments provide opportunities for large-scale low carbon energy infrastructures that can deliver high levels of CO₂ emissions reduction in a relatively cost-effective manner. However, the high capital outlay and risks associated with these energy projects deter investment and may lead to less optimised solutions being delivered. The COF could provide crucial seed-finance to de-risk these large-scale projects for private sector investment, using funds collected from the multiplicity of smaller sites, where high levels of CO₂ reduction are not cost-effective. In so doing, the COF limits the exposure of developers of small sites to the costs associated with meeting carbon reduction obligations, which will be imposed by national and, potentially, local policy.

The activities of the COF may not be limited to investment in energy projects in new developments. There is a wide-range of potential CO₂ reduction initiatives that the COF could invest in. Improving the energy efficiency of the existing stock has been identified as a potential priority for the COF. This is explored in this report.

In its initial phase, the COF is likely to be primarily a vehicle to collect funds from developers in relation to the CO₂ emissions arising from new developments. There is a longer term ambition, however, that once established the COF could become attractive to other types of investor, for example private or institutional investors. Procurement of private sector investment partners to match the public sector funding would significantly increase the size of the COF and its ambition in terms of the scale of projects it invests in. The prospects for the COF to attract private sector investments are also considered in this report.

Interaction with national policy

A carbon reduction obligation on developers is required to create an opportunity for a carbon offset fund. The policy that imposes this obligation must include flexibility on how the obligation is met, in terms of whether it is through onsite carbon reduction measures or through a commuted payment into a fund.

Carbon reduction obligations on new developments can be set by both national regulations, i.e. the Building Regulations, or local planning policy. The Building Regulations set a minimum requirement for the level of carbon reduction that must be achieved, without flexibility for this requirement to be offset by a payment. Local planning authorities, however, have a remit to set targets for sites in their areas in terms of carbon reduction or renewable energy generation, provided these targets are justified by a sound evidence base. The local policy could provide for a payment into an offset fund, rather than meeting the target on-site, if the developer can demonstrate that achieving the target on-site is not technically feasible or jeopardises the commercial viability of the site.

Government is committed to the introduction of zero carbon policy for homes and non-domestic buildings. The zero carbon policy will require that all emissions from a development are eliminated, by reducing energy demand or providing a low carbon supply, or mitigated by other means. The measures that developers can adopt to mitigate the remaining emissions, once energy efficiency and low carbon generation have been accounted for, are collectively described as 'allowable solutions'.

The range of measures that will be included as allowable solutions is currently being considered by government. In order for the COF to have an opportunity to collect investment from developers post the introduction of zero carbon policy – 2016 for domestic

buildings and 2019 for non-domestic buildings – it is key that it is included as an Allowable Solution.

Government recently consulted on the definition of zero carbon domestic and non-domestic buildings, including what measures should be included as allowable solutions. This consultation sought views on whether S106 obligations or Community Infrastructure Levy (CIL) contributions, which could act as mechanisms to collect funds into the COF, are appropriate as allowable solutions. The consultation responses provided only limited support for the use of planning obligations or CIL as allowable solutions and these mechanisms were not identified in the government's response to the consultation as measures that had received broad support.

To enable the carbon offset fund to play a significant, ongoing role in carbon reduction in the region, we recommend that Cambridgeshire Horizons and appropriate local stakeholders, lobby government for a broad definition of allowable solutions. This should include financial contributions into a locally administered offset fund.

Planning mechanisms for collection of funds

Following a review of the existing and emerging legislation related to the use of S106 obligations and CIL, it is concluded that either mechanism could be used to collect funds for a COF.

CIL is intended to enable the pooling of contributions to provide funding for infrastructure to support the development of an area. The charging schedule that forms the basis of requests for funds from developers must be supported by an evidence base that provides details of specific projects or purposes for which funds are being sought. They should be identified in the integrated development plan and local infrastructure framework. The integrated development plan for Cambridgeshire has been adopted, but currently includes one initiative related to low carbon development.

CIL regulations more narrowly define how Section 106 can be used such that contributions sought through this mechanism are generally related to development specific impacts. It is intended that after 2014 or following adoption of CIL by a local planning authority, Section 106 will no longer be able to be used for the pooling of five or more contributions towards a project or type of infrastructure. Given the nature of development in Cambridgeshire, it is considered more likely that S106 will be used to collect funds into the COF, where it is not intended to pool such contributions towards specific projects or types of infrastructure and prior to 2014. After this date it will be necessary for each of the local authorities to progress CIL if they are to progress strategic infrastructure projects that contribute towards carbon emissions reductions or wish to pool contributions from a larger number of developments.

The concerns regarding the use of S106 mainly relate to the limitation of the use of obligations following the introduction of CIL. One of the concerns relating to the use of S106 as a mechanism to collect funds is the requirement that planning obligations should be directly related to the development, including a 'geographical or functional link' between the development and the item being provided. Although a functional link between the effect of the development, in CO₂ terms, and the purpose of the fund to reduce CO₂ emissions can be demonstrated, it would need to be argued that geographical proximity is not critical to achieving the aim of the obligation, which is delivering CO₂ emissions. In order to create the opportunity for the COF to generate funds, an appropriate local policy framework must be put in place. This policy framework must not only seek to

reduce carbon emissions, but also provide scope for developers to deliver carbon reduction by payment into an offset fund, where appropriate. All local authority planning teams in Cambridge must be made aware of the potential for a Carbon Offset Fund to be developed in the County, so that this can be taken into account when formulating policy.

Where Local Development Documents (LDDs) are already adopted these should be reviewed and updated at the earliest opportunity, to enable updated policies to be put in place that will enable the collection of funds.

If supported by appropriate policies in the LDF, Supplementary Planning Documents (SPDs) could be used to provide details of a local authorities requirement to contribute to a COF.

Structure of the Fund

A variety of potential vehicles for the fund-holding body have been assessed, including the contractual or partnership approach and the special purpose vehicle or SPV approach. The principal advantage of the SPV approach is that the legal entity is separate from its members and contract in its own name.

The most appropriate vehicle for the COF appears to be the company limited by guarantee (CLG). These vehicles are commonly incorporated for non-profit making functions, with no share capital and members rather than shareholders. The CLG offers the advantages of limited liability status, a flexible membership structure and constitutional flexibility, required by the COF vehicle.

Scale and impact of the fund

An analysis of potential tariff levels – purchase price of CO₂ offsets (£/tCO₂) – has indicated that a tariff level of 100 £/tCO₂ provides an appropriate mix of limiting the costs incurred in meeting carbon reduction obligations, while providing an incentive for developers to exploit cost-effective onsite CO₂ reduction opportunities (this assumes that the tariff is paid for 30 years of emissions from the property). This is in the mid-range of capped cost for Allowable Solutions being considered by government.

The greatest opportunity for the fund to generate income will be once zero carbon policy is in effect, assuming that payment into the fund is considered an Allowable Solution.

Payments into the COF prior to the operation of allowable solutions will be generated only where developers contribute to the COF rather than achieving a level of onsite CO₂ reduction that must be set within the local authority planning policy framework.

Based on the forecast levels of development and assuming a tariff of 100 £/tCO₂, the fund is estimated to generate an annual income of £15m to £23m per year over the period from 2017/18 to 2021 (beyond this point the fund income is forecast to drop, but data on the quantity of new completions is expected to be less reliable, i.e. sites that are not currently envisaged in the annual monitoring reports (AMRs) will be brought forward).

The impact of potential fund investments have been assessed, in particular the use of fund investments to improve the investment proposition of district heating systems and the opportunities for energy efficiency improvements..

District heating

The specific opportunity for installation of a biomass fuelled CHP system and district heating system at Northstowe, sized to provide net zero CO₂ emissions on site, has been assessed. Prior financial modelling has shown that in order for investment in the district heating system at Northstowe to make a reasonable financial return (IRR of 7.5%), a connection cost of £14.2k per dwelling is required. An analysis of the cost of compliance with zero carbon policy in the absence of a district heating network has shown that the onsite biomass CHP/DH system is only marginally more costly. However, the risks associated with investment in D infrastructure and very modest financial return may deter investment.

The COF can provide initial finance to the project, helping to attract further investors and potentially to reduce connection costs. The COF could provide finance in terms of a grant, low cost debt or an equity stake. For example, the cases of a £10 million up-front grant and a low cost loan covering 50% of the district heating system capital cost have been assessed. Assuming the same level of IRR is to be maintained, these investments could reduce the connection costs per dwelling by £1.4k and £1.9k respectively. The impact of the renewable heat incentive, not included in the original financial model, has been estimated to provide a further £1k reduction in the connection cost. Taken together, these reductions in the connection cost would provide a significant financial incentive for development of the onsite biomass CHP & DH strategy.

The onsite carbon reduction delivered by the biomass CHP/DH system at Northstowe, compared to the alternative of meeting zero carbon policy, has been estimated at 25,000 tCO₂/yr. This represents highly cost-effective CO₂ saving for the COF, particularly in the case of the low cost loan, as a relatively small overall cost to the COF is expected to leverage substantial further investment. A similar investment model could be used at Cambridgeshire's other large sites, e.g. the urban extensions around Cambridge, where there are opportunities for high levels of CO₂ reduction to be delivered onsite at marginal additional costs. In total, around 25,000 homes are expected to be delivered in these sites, together with substantial supporting uses, so the opportunity for additional CO₂ reduction (beyond meeting policy), is very large.

Energy efficiency

Energy efficiency improvements provide a highly cost-effective means of CO₂ reduction. The Cambridgeshire local authorities have identified £255 million of potential energy efficiency improvements across their existing stock. Taking the cost of CO₂ saving in Cambridge City Council⁴ as a proxy for the cost of CO₂ saving through energy efficiency across the County, this implies the potential of 1.4MtCO₂ saving over the lifetime of measures applied.

The level of grant required from the COF to capture these CO₂ savings would not be required to fully fund the measures (i.e. the full £255m). Based on the experience of the Supplier Obligation and CERT, grant levels in the range of 50% to 75% of the capital cost are highly effective at stimulating uptake of simple energy efficiency measures (higher levels of grant are required for 'priority group' households, e.g. those receiving income support).

Assuming the full income into the Fund, around £20m/yr, were invested in energy efficiency improvements, an estimated 165,000 tCO₂ (over the lifetime of the measures)

⁴ Estimated at £185/tCO₂, based on data included in the Cambridge Housing Condition Survey

would be delivered by the measures applied each year. The opportunity for carbon saving through energy efficiency would reduce over time due to the action of the fund and the cost of remaining CO2 saving measures would be likely to increase (as low cost measures, such as cavity wall insulation, become saturated). The opportunity for investment in energy efficiency improvements to be leveraged by, for example, combining with CERT grants should be investigated.

APPENDIX B

Cost Benefit Analysis of delivering new public buildings to zero carbon standards

The Study

The aim of the study is to provide Cambridgeshire public sector partners with a realistic evidence base to demonstrate the costs and benefits delivering new public buildings to zero carbon ahead of the government timetable.

The objectives of the study include :

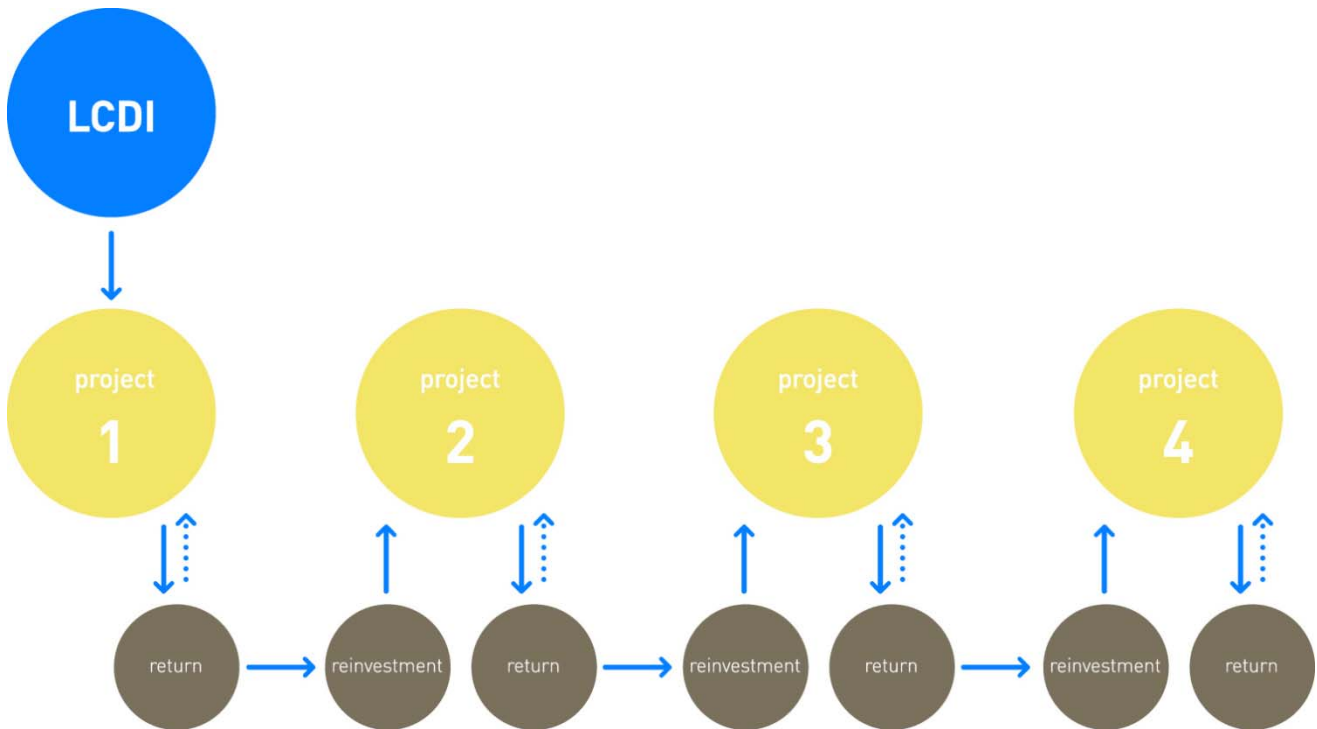
- Provide an evidence base of the costs required to meet zero carbon for new public buildings. This will need to compare whole life time running costs for the new buildings against factors such as increased capital expenditure, cost of carbon and energy
- Analyse the cost benefit of delivering the zero carbon standards against other factors such as Carbon reduction Commitment and LAA targets, to identify if an early move to procure buildings to the higher specification provide a long term cost benefit
- Compare cost benefits for connecting to community scale renewable energy infrastructure to individual building solutions e.g .microrenewables

Identify the risks and opportunities in investing upfront/early delivering zero carbon new buildings as compared to waiting for the standards to emerge.

Appendix C – Low Carbon Development Initiative (LCDI)

The LCDI-SPV will spread risk over a portfolio of individual low carbon energy projects for developments, lever economies of scale, set up contractual frameworks, and outline agreements and options, to achieve sufficient de-risking of renewable or low carbon energy solutions.

The development model



Underneath the LCDI-SPV, site specific delivery vehicles SS-SPVs are created. The principle of the SS-SPVs is to focus a specific project, such as Northstowe, bringing the risk mitigation and regional partnerships together to make low carbon energy a viable investment for a project.

The main benefits that will accrue from the Low Carbon Development Initiative (LCDI) is a substantial reduction in the region's carbon footprint, contributing to reaching the regional and national carbon targets, knowledge that can be shared with partners and reinvestment of any monies into the development of the subsequent projects. Carbon savings will be achieved both through the projects the LCDI directly assist and by enabling further development and market-led investment on a broader scale such as the project promoted by Renewables East and the LCDI on Feed In Tariff.