

Appendix B: Scoping Report: Feasibility of a Carbon Offset
Mechanism for Cambridgeshire – Executive Summary. Element
Energy (Sept 2010)

1 Executive Summary

This study explores the role that a Carbon Offset Fund (COF) could play in delivering low carbon growth within Cambridgeshire.

Delivering high levels of carbon reduction in certain types of site can be technically very challenging and expensive. Where high levels of carbon reduction are difficult and expensive to achieve, a cost-effective alternative would be to allow developers of those sites to pay into a fund, effectively to purchase offset credits, rather than meet their whole carbon reduction obligations through on-site measures. This “Carbon Offset Fund” would then be able to pool these payments and invest the funds that accrue into priority carbon reduction projects in the region. The operation of a Carbon Offset Fund would also deliver higher levels of carbon reduction than would be achieved by the use of on-site measures alone.

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 Carbon Offset Fund 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 Carbon Offset Fund would limit 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 Carbon Offset Fund may not be limited to investment in energy projects in new developments. There are a wide-range of potential CO₂ reduction initiatives that the Carbon Offset Fund could invest in. These are explored in this report.

It is anticipated that the Carbon Offset Fund would encourage private sector investment into low carbon projects for the region. The involvement of private sector partners in joint ventures would significantly increase the ambition of the Fund in terms of the scale of projects it invests in. The prospects for the Carbon Offset Fund to attract private sector investment are also considered in this report.

The key benefits that Cambridgeshire stands to gain from establishing a Carbon Offset Fund are as follows:

- The fund provides a mechanism to direct investment into the most cost-effective CO₂ reduction opportunities in the region.
- It enables high potential projects, in terms of CO₂ reduction, to be taken forward, that would not have been delivered by the private market (due to high risk, large up-front cost or insufficient returns).

- It leverages private sector investment into low carbon infrastructure projects in Cambridgeshire.
- It strengthens the partnership working between public sector partners in Cambridgeshire, facilitating a coordinated approach to prioritization and deployment of low carbon infrastructure projects.
- Successful demonstration of the Carbon Offset Fund provides an opportunity to demonstrate national leadership and influence the direction of policy. This will be necessary for the Carbon Offset Fund to secure significant income from development.
- The Carbon Offset Fund's investments will stimulate local supply chain and generate 'green jobs'.

1.1 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 on-site 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 Carbon Offset Fund 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 payment into the fund is included as an Allowable Solution.

The previous government 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 Carbon Offset Fund, 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. Since the change in government, further work has been initiated on the definition of zero carbon (in both domestic and non-domestic sector), including the role and form of Allowable Solutions. Recent government statements have suggested that the concept of local offset funds as an Allowable Solution is being viewed favourably, although no further formal announcements on government policy have been made.

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.

Until the advent of Allowable Solutions and zero carbon policy in 2016, the mechanisms available to enable the payment by developers into a Carbon Offset Fund are limited to those provided under existing Planning law.

- The key role for the offset fund in the longer term will be as an Allowable Solution within the definition of zero carbon homes and non-domestic buildings.
- Once zero carbon policy is in force, developers will be obliged to invest in Allowable Solutions to deal with any residual emissions from their development (i.e. those not avoided through onsite measures). Contributing into the Carbon Offset Fund will not therefore constitute an additional cost on developers, it will simply be a type of Allowable Solution.
- In order to implement a Carbon Offset Fund prior to introduction of zero carbon policy (i.e. before 2016), local planning policy will be needed to create a role for the Fund. This will involve a target on new development to achieve a CO₂ reduction standard that is more onerous than the Building Regulations in force at the time. The policy will allow for a commuted payment into the offset fund in cases that the developer cannot achieve the target onsite.
- Note that in the case of implementation of the Carbon Offset Fund prior to zero carbon policy, it does represent an extra cost on developers as the local planning policy requires a standard that is more advanced than they are required to achieve by regulation.

1.2 Planning mechanisms for collection of funds

Following a review of the existing and emerging legislation related to the use of S106 obligations and CIL, the report concludes that either mechanism could be used to collect funds for a Carbon Offset Fund.

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, and currently includes a chapter

related to low carbon development, as well as a clear understanding of the challenges of climate change adaptation and mitigation.

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 Carbon Offset Fund, where it is not intended to pool such contributions towards specific projects or types of infrastructure. After 2014, however, it will be necessary for each of the local authorities to implement 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 Carbon Offset Fund 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 Cambridgeshire 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 Carbon Offset Fund.

- We consider that either S106 or CIL could be used to collect contributions into the fund. There are existing precedents for use of S106 to collect contributions into a fund.
- However, the introduction of CIL has narrowed the scope of S106 and this may limit the use of S106 over time. In particular we recommend Counsel opinion is sought as to how the requirement for planning obligations to demonstrate a 'geographic or functional link' between the development and the item being provided should be interpreted with respect to a Carbon Offset Fund.

1.3 Structure of the Fund

The vehicle for collecting monies into the Carbon Offset Fund will be the same whether or not the funds are collected by virtue of Allowable Solutions or Planning law.

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 can contract in its own name.

The report concludes that the most appropriate vehicle for the Carbon Offset Fund 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 fund vehicle.

- The Company Limited by Guarantee seems to be the most appropriate structure for the fund-holding company.

1.4 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 Carbon Offset Fund prior to the operation of Allowable Solutions will be generated only where developers contribute to the Carbon Offset Fund 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.

1.4.1 District heating

The specific opportunity for installation of a biomass fuelled CHP system and a site-wide 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, showed that providing 100% of the town's heat and power on site would be only marginally more costly than providing the 70% necessary to comply with policy. However, the risks associated with investment in DH infrastructure and very modest financial return may deter investment.

The Carbon Offset Fund could provide initial finance to the project, helping to attract further investors and potentially to reduce connection costs. The Carbon Offset Fund could provide finance in terms of a grant, low cost debt or an equity stake.

The onsite carbon reduction delivered by a biomass CHP/DH system at Northstowe providing 100% of the town's heat and power has been estimated at an additional 25,000 tCO₂/yr. [This would represent a highly cost-effective CO₂ saving for the Carbon Offset Fund, particularly in the case of the low cost loan, as a relatively small overall cost to the Carbon Offset Fund 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 on-site 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.

1.4.2 Energy efficiency

The role of the Carbon Offset Fund in delivering energy efficiency improvements has provoked debate among the local authority partners. In its favour, energy efficiency improvement does provide a highly cost-effective means of CO₂ reduction. On the other hand, there is a view that other support programmes adequately incentivise energy efficiency improvement (particularly the Supplier Obligation). There are also some concerns regarding the use of either S106 or CIL as a mechanism to collect funds for energy efficiency improvement. A decision on this can be deferred until later, when an investment strategy for the Carbon Offset Fund is developed. For the purpose of this study, energy efficiency improvements have been considered as a potential investment opportunity for the Carbon Offset Fund.

The Cambridgeshire local authorities have identified approximately £255 million of potential energy efficiency improvements across their existing stock. Taking the cost of CO₂ saving in Cambridge City Council¹ as a proxy for the cost of CO₂ saving through energy efficiency across the County, this implies the potential or 1.4MtCO₂ saving over the lifetime of measures applied.

The level of grant required from the Carbon Offset Fund 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).

¹ Estimated at £185/tCO₂, based on data included in the Cambridge Housing Condition Survey

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) 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.

In relation to energy efficiency projects, the Carbon Offset Fund may be constrained by the mechanism used to enable payment by Developers. Energy efficiency projects will not amount to “infrastructure” under CIL and may not be sufficiently directly linked to the relevant development to enable use of s.106. This report recommends that Counsel’s opinion is sought on the scope of use of s.106 in this context (and for other projects proposed by the Carbon Offset Fund).

1.5 Implementation Plan

The major next steps required to progress the Carbon Offset Fund have been set out in an indicative programme. The programme will clearly be highly dependent on the decision regarding whether to implement the offset fund prior to zero carbon policy (i.e. prior to 2016) or to wait until zero carbon is in force. This decision will need to be informed by knowledge of local authority growth plans (i.e. how much development will proceed prior to 2016) and a realistic view of the timescales for implementing the required local policy. Ideally, this decision would also be informed by greater clarity from government on the role of Allowable Solutions, although the timescale for this is uncertain.

The critical path in terms of establishing a Carbon Offset Fund is mainly determined by the timescales for developing appropriate local policy (particularly in the case of early introduction of the Fund). However there is significant additional work to be done in developing the detailed design of the fund’s structure, identifying projects and developing an investment plan. These key tasks are identified in the Implementation Plan.