

STATEMENT 09

City Centre & University AAP Public Examination

Document Number:	PCC CC&UAAP 09
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Title:	Is there sufficient detail on the CHP?
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Examination Session:	26th January 2010
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Issue to be Examined

1. The Inspector has asked the question “Is there sufficient detail on the CHP?”
2. The Council believes that the AAP as submitted is sound. It believes that a Combined Heat & Power (CHP) and District Heating/Cooling (DH) network forms part of the essential infrastructure required to enable the delivery of low carbon development in the City Centre. While the justification for and delivery of CHP is explained in the AAP, the details relating to this approach are set out in the evidence base submitted alongside the AAP.
3. The Council recognises, however, the importance of providing clarity on the justification of and delivery mechanisms for this new area of planning policy. Since the AAP was submitted the Council has now received the full report on further work commissioned that refines the understanding on the detailed options for establishing Energy Service Company (ESCo) required to deliver the CHP/DH network. In order to both improve the clarity of the AAP, some suggested improvements are set out in Appendix A. These improvements do not affect the Council's position that the AAP is sound as submitted.

Summary of Key Points:

4. **Background Evidence:** In Building a Greener Future the Government has announced that all new homes in England and Wales must be zero carbon by 2016, with interim reductions in CO₂ emissions of 25% below current Building Regulations by 2010 and 44% by 2013. There are similar ambitions to cut carbon emissions from new non-domestic buildings by 2019. In the Supplement to PPS1: Planning & Climate Change, the Government has also identified that the planning system has a key role to play in supporting the delivery of this timetable for reducing carbon emissions from domestic and non-domestic buildings. At a local level the Council has set targets for a 20% reduction in city-wide emissions by 2013, 60% by 2020.
5. In order to further inform the delivery of these aspirations, the Council commissioned a Sustainable Energy Study to explore the way in which the spatial planning system could assist the delivery of low or zero carbon development, in the City Centre. The developments and redevelopments in the City Centre have a significant and potentially complementary demand for energy that may provide the opportunity for energy solutions at a scale that would not be viable if each part of the site was considered separately. The development of an integrated low and zero carbon energy strategy for these developments as a whole therefore has the

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- potential to deliver significant additional CO₂ savings, and reduce the level of cost to the developer.
6. The 2009 Plymouth City Centre Sustainable Energy Study showed that due to the size mix, location and phasing of development proposals set out across the plan period, opportunities for low carbon energy supply needed to be considered at an area scale using combined heat and power, and district heating solutions.
 7. The work identifies that, to achieve Government's proposed CO₂ reductions for new buildings, CHP and DH is essential post 2016, and prudent post 2013. The study also recognises that in terms of implementation, whilst micro renewable solutions can help to meet initial emissions targets, their implementation in the short term will reduce the effectiveness, efficiency and viability of CHP/DH in the longer term - particularly when they become essential post 2016.
 8. On this basis the Council has concluded that development of low carbon infrastructure in the form of a CHP/DH network should be taken forward as a priority in the City Centre, and that all major developments should contribute to this objective through onsite design measures, the housing of energy plant, and / or offsite contributions to the completion of the network.
 9. Taking forward the establishment of the nucleus of the required CHP/DH network on the basis of existing energy demands within the City Centre also provides the opportunity to drive down emissions from the existing built stock, whilst setting the foundation of physical infrastructure and commercial partnerships that will be required to enable low carbon new development. The recently published *draft* Business Feasibility Study for an Energy Services Company (Jan 2010) explores these opportunities and the business models that could be utilised to deliver them. This study does provide some additional detail around the delivery of Proposal CC05, as well as underlining the importance of the Council's role in leading the establishment of an ESCo that can design, build and manage this proposed infrastructure. It also identifies key stakeholders, on the basis of existing heat & power loads within the area.. These additional details could now be usefully added to the AAP, assisting clarification, and some proposed changes to the AAP text are set out in Appendix A.
 10. **Does the Proposal CC05 contain sufficient detail on the proposed CHP?** The Council believes that the level of information currently presented within Proposals CCO5 is sufficient and that the AAP as submitted is sound. The Council has undertaken a benchmarking exercise with other LPA's (eg. Southwark, Greenwich, Woking, Southampton, Birmingham, Leicester) which shows that the area specific

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detail provided within the CCUAAP exceeds other DPD's dealing with this topic. However, this is a new and emerging policy area, and in this context there is clearly always room for improvement. If the inspector is minded, some suggested clarification to the AAP text for this section are set out in Appendix A.

Appendix A

Potential clarification of Proposal CC05 – if the inspector considers it to be appropriate

Enabling Low Carbon Development

The Council recognises the need to reduce the city's carbon footprint as part of the necessary response to climate change, delivering the government's move towards low or zero carbon development. Plymouth's Climate Change Action plan sets out targets for a 20% reduction city wide CO₂ emissions by 2013 and 60% by 2020.

The potential developments in the City Centre are of a significant scale, in terms of future energy demand, and they will be subject to increasingly challenging targets concerning carbon dioxide emissions under future Building Regulations, which means that plans for City Centre need to embrace new low carbon energy infrastructure.

The Plymouth City Centre and Derriford Sustainable Energy Study (2009) demonstrates that due to size, mix, location and phasing of new development proposals, the government's aspirations for Low or Zero Carbon developments can only realistically be met through the use of combined heat and power, and district heating/cooling solutions. This area wide approach has the potential to significantly reduce the level of carbon emissions from new and existing developments whilst also reducing the cost burden to the developer.

The Core Strategy, Strategic Objective 11 and Policy CS20 supports the government's move toward zero carbon development. With regard to the City Centre & University area, Policy CC05 defines how this can be progressed through specific development proposals.

Policy CC05 Combined Heat & Power & District Heating & Cooling

An integrated Combined Heat and Power and District Heating and Cooling (CHP/DH) network will be delivered throughout City Centre & University area to enable existing and new development to achieve significant carbon savings. Key requirements to enable delivery of this network include the following:

1. *Development proposals at Colin Campbell Court (CC08), Cornwall Street (CC11) and North Cross (CC14) will be required to include space for a Combined Heating and Power Energy Centre, to support a phased roll-out of the district heating network.*
2. *All proposals for non-residential development exceeding 1,000 sq m of gross floor space and residential developments comprising 10 or more units (whether new build or conversion) will be required, :*
 - a. *Where the district wide network is not yet operational in relation the particular development under consideration to*
 - i. *Make an offsite contribution to the establishment of the network*
 - ii. *Include heating and cooling systems that allow future connection to the local district heating / cooling networks.*
 - b. *Where the district wide network is operational in relation the particular development under consideration to:*
 - i. *Connect to the network*

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ii. Make an offsite contribution towards local completion of the network

The requirement (set out in Core Strategy Policy CS20) for development to incorporate onsite renewable energy production equipment is relaxed for such developments, in favour of measures that enable delivery of area wide solutions.

Individual proposals that come forward that would help the delivery of the Combined Heat and Power, District heating and Cooling network will be supported by the council.

The opportunity to incorporate district heating / cooling pipe infrastructure will be considered in the forward planning and delivery of all relevant transport and public realm work in the City Centre & University area.

Other developments will be required to include heating and cooling systems that allow connection to the network

The Plymouth City Centre Sustainable Energy Study 2009 demonstrates that due to the nature and location of the proposed developments that the emissions reduction targets proposed in the CLG Policy Statement, 'Building a Greener Future' will not be deliverable through the use of 'micro renewable' solutions. Having considered the specific characteristics of new development in this area, the Study identifies delivery of a Combined Heat & Power and district heating (CHP/DH) is sensible post 2013, and essential post-2016. Whilst site specific micro-renewable solutions may be able to meet the short term Building Regulations requirements for emissions reductions, their implementation will reduce the effectiveness & viability of CHP and district heating networks in the longer term.

A CHP system can be fuelled by biomass (renewable energy technology) or by natural gas (low carbon technology). It can also incorporate other technologies as part of a wider network. To set the foundations of this low carbon network it is likely that natural gas CHP will be the initial preferred option as a well-established proven technology, with the low capital costs, and small development footprint.

Gas CHP is a low carbon technology with the potential to deliver substantial reductions in the City Centre's carbon emissions. In the future other fuel sources such as biomass could be 'plugged' into the CHP / DH system, once the initial infrastructure is in place. This Proposal will bring considerable benefits to new developments in terms of providing a cost-effective way of meeting increasingly challenging Building Regulations requirements as well as providing cheap low carbon energy and heating for future occupants. CHP can also offer the benefits of being able to deliver carbon savings for existing buildings, where building fabric improvements may be difficult to achieve. It may also deliver other improvements, including reduced cost of boiler replacements, and lower revenue costs.

This Proposal, will be implemented on a phased basis, and delivered by an Energy Service Company (ESCO) in partnership with the City Council and developers. The role of the ESCo will be to develop, manage and maintain the CHP / DH infrastructure and to provide energy services to customers across the City Centre and University area.

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Further work demonstrates that there is the potential to establish a first phase of the DH network around existing heat & power requirements for customers around the University of Plymouth campus.

Given the lead in time that will be required for establishing the ESCo, and associated CHP/DH infrastructure, this work will need to be completed early in the plan period to ensure that it provides the required foundation that will facilitate the roll out of 'carbon compliant' development.

The exact specification of the CHP energy centres required to support a commercially viable energy network will evolve according to local market conditions, but to deliver the desired carbon savings from the network some proposals will be required to accommodate energy plant that supports delivery of heat & power to adjoining sites / proposals. Key proposals that have the potential to support this phased roll out are therefore required to safeguard land for this purpose.

The current expectation is that the area is likely to require a number of energy centres to support the phased roll out of the district heating and cooling network. It is currently anticipated these will be focused around Colin Campbell Court, Cornwall Street & North Cross. Proposals in these areas are therefore required to safeguard and that could support this kind of use.

The Council will proactively support the establishment of a City Centre & University ESCo, and then support the ESCo in the implementation of the required CHP/DH pipe infrastructure. This support will come through the planning process and when the Council carries out transport or public realm works. Developments will be required to connect to the network and to provide financial contributions towards its establishment.