

LSBU study CHP for the South Bank

In 2008, the same team were asked to carry out a major strategic feasibility study of Combined Heat and Power (CHP) options for the whole South Bank area in London. The project is being carried out in partnership with the South Bank Employers Group and is funded by the London Development Agency with the intention that the recommended approach goes forward for implementation by the private sector. The study may lead to a multi-million pound infrastructure project in the area from Waterloo to Blackfriars that would shape the way energy is delivered in the future.

There are a significant number of new, high density, mixed use developments planned in the South Bank area over the next 5 years. Such growth in building and energy density presents a rare opportunity to develop an integrated and area wide approach to energy supply and distribution, incorporating low CO₂ energy generation technologies with district heating and cooling networks. These networks could link together existing buildings on the South Bank, such as St Thomas' Hospital, Shell, the South Bank Arts Complex etc, with new developments as these arise. The inclusion of existing buildings will help to catalyse the scheme initially, providing known and stable demand in the short term. LSBU's own buildings are part of the study and it is hoped that a CHP installation may be viable on the site for future connection into the network.

The LSBU study will assess whether CHP could be the most economic and low carbon energy supply option for existing and future demands of heating, cooling and electricity. Building energy demands have now been analysed across the South Bank area and various energy supply options are being assessed in order to estimate the likely costs, practicality, CO₂ savings and benefits that could come from these. The study will also review the timing of future developments and energy demands as new buildings come on stream. The aim is to come up with a scheme that will be taken up by the private sector as a long term commercial venture and will ultimately reduce the carbon footprint of the whole area.

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LSBU Plan London's energy with the GLA

LSBU researchers carried out two reviews of the energy components of the London Mayor's London Plan to assess its success. This work studied how well the planning guidelines have done in encouraging energy efficiency, Combined Heat and Power (CHP) and renewables across new developments in London. The outcomes show the success of the policies and contributed to an update of the London Plan which

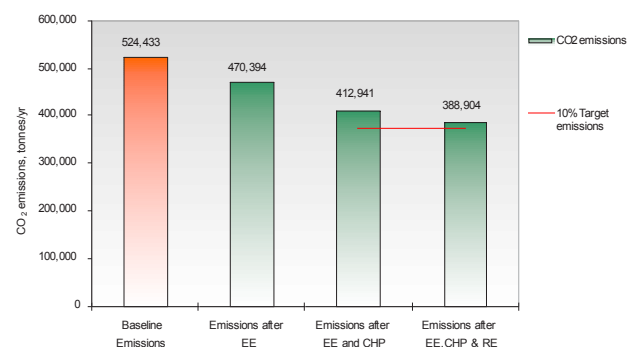
tightened the requirements for reducing energy consumption and CO₂ emissions.

The original Mayor's Energy Strategy required a baseline CO₂ emission to be determined for all proposed large developments. Developers are then required to show how they will reduce this through energy efficiency and CHP. They are also required to reduce carbon emissions by a further 10% using on-site renewable energy sources, the so called 'Merton Rule', named after the borough where the policy began.

The LSBU team analysed 113 planning applications submitted by developers since the GLA planning rules came into effect in 2004. Overall, the study showed that the London Plan has reduced CO₂ emissions by 135,000 tonnes/yr. LSBU's Professor Tony Day said "this represents a 26% reduction in carbon emissions from new developments with three quarters of the savings made through energy efficiency measures including more widespread use of CHP". The study also concluded that the target for 10% on-site renewables was met on average by late 2005. It is highly significant that the policy is not just driving renewables, but energy efficiency and CHP too.

The research indicates that developers were responding to the economic argument that the investment required for more expensive renewable energy capacity would be smaller if they tackled building energy demand at an early stage in the design process. "Developers have been through a steep learning curve, early energy submissions were quite poor, but they have got much better. This supports the Mayor's subsequent decision to raise the renewables target to 20%" Mr Jones said.

Former London Mayor Ken Livingstone said "The LSBU study shows that the development industry in London has made a dramatic change in its approach to energy and climate change over the last four years. It also shows the value of setting tough policy to drive innovation and the adoption of energy efficient building design, efficient energy supply and renewable energy technologies."



CO₂ emissions from 113 proposed developments in London