

ASSA Low Carbon Initiative

Working Together to Achieve a 60% Reduction in Household Emissions



The Bigger Picture

- We need to reduce CO₂ emissions by 60-85% by 2050 to avoid the significant and irreversible effects of climate change¹
- 40% of UK CO₂ emissions come from residential and commercial buildings
- 85% of the current UK housing stock will still be in use in 2050²
- 1.5 million of the UK's 24 million homes are in Conservation Areas or listed as architecturally important

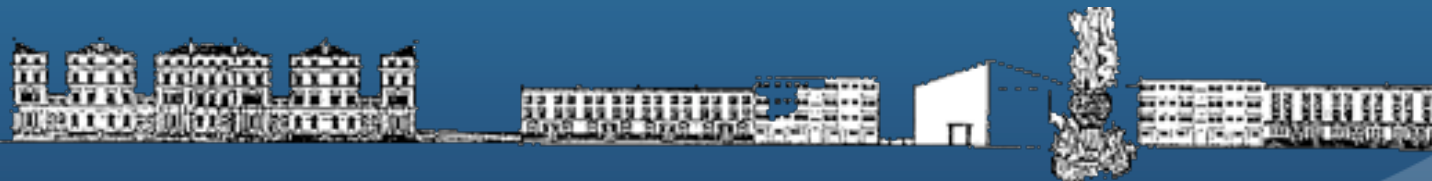


1. UK Government, International Panel on Climate Change, 2. UK Sustainable Development Commission



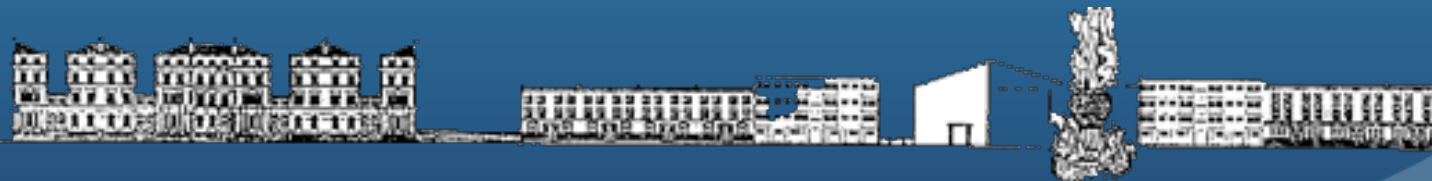
The Big Green Challenge

- Run by the UK National Endowment for Science, Technology and the Arts (NESTA)
- **£1 million** prize money will be awarded to one community **'to be spent for the whole community'**
- Prize awarded to the most innovative approach to reducing CO₂ emissions of their community by 60%
- Timeline
 - **February 29th 2008** Initial 2,000 word, high level proposal submitted
 - **Spring 2008** Winners of first stage submit detailed proposals
 - **October 2008 October 2009** Winners of next stage implement their solutions
 - **November 2009** Winner announced



ASSA Proposal

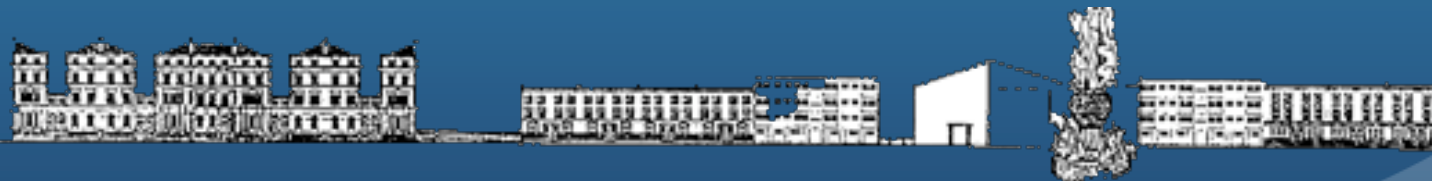
- Meet 60% target through
 - 25-30% increase in energy efficiency
 - 25-30% low-carbon energy generation
 - 0-10% behavioural change
- The reduction would be achieved at **zero cost** or capital outlay and increase house values and/or reduce bills¹
 - Energy efficiency is self-financing. Capital costs repaid through energy savings
 - Low-carbon energy paid for through savings, grants and 'green financing' options
- Try and engage all houses and flats
 - Scale necessary to collectively bargain and reduce administrative costs
 - All owners and tenants benefit from increased home value and/or reduced bills
 - Buy-in will require good marketing and hard graft!
- Win or lose, the challenge will engage the community



1. See appendices for further details

Appendix 1: Energy Efficiency

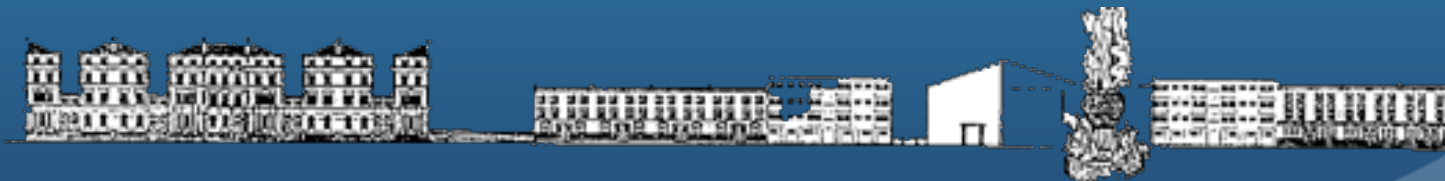
- 25-30% reductions from energy efficiency
- Engage electricity and/or gas provider to participate
 - Both have regulatory obligations to reduce the CO₂ emissions of their customers¹
 - Get all residents to switch to this provider(s)
- Energy efficiency measures carried out by dedicated company
 - Company carries out energy audit then implements energy efficiency measures such as loft insulation, draught-proofing, newer boiler, CFL lighting, heating controls etc.
 - Economies of scale given homogenous houses on each street
 - Company guarantees energy savings. These guaranteed savings are like an income stream and mean up-front funding can be provided and paid out off over time from the savings



1. UK Carbon Emissions Reduction Target

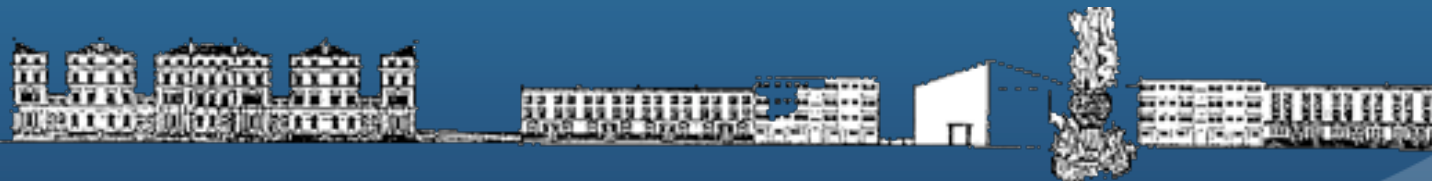
Appendix 2: Low-Carbon Energy

- 25-30% reductions from low carbon energy generation
- Low carbon energy generation comes in many forms...
 - Totally renewable energy like solar hot water heating (tubes on south-facing roofs), solar photo voltaic (these come as tiles that look like slate), ground source heat pumps (vertical or horizontal trenches)
 - Highly efficient solutions such as combined heating and power - boilers that provide heating and produce electricity
- Low carbon energy can be expensive and have long payback times but it uses little or no energy once installed. It would be financed through
 - Energy savings
 - Grants - there are many, many grants for individual and community programs



Appendix 3: Community Engagement

- This is key to the scheme - how to get everyone involved not just the committed environmentalists
- Having a scheme that reduces bills and/or increases house prices and has a positive environmental impact isn't enough of a carrot
 - Utilise professional design, marketing and communications skills of residents
 - Leverage existing community network
 - 'Street champions' hold one-on-one meetings with residents
 - Get buy-in from London and Quadrant and Westminster school - any other large landlords?
- The co-operative model means every participant is an owner of the co-operative and can take an active or passive role.
- Win or lose, the initiative will improve community involvement!



Appendix 4: Example

Annual Electricity Bill	£ 1,000
Annual Gas Bill	£ 1,200

Energy Efficiency

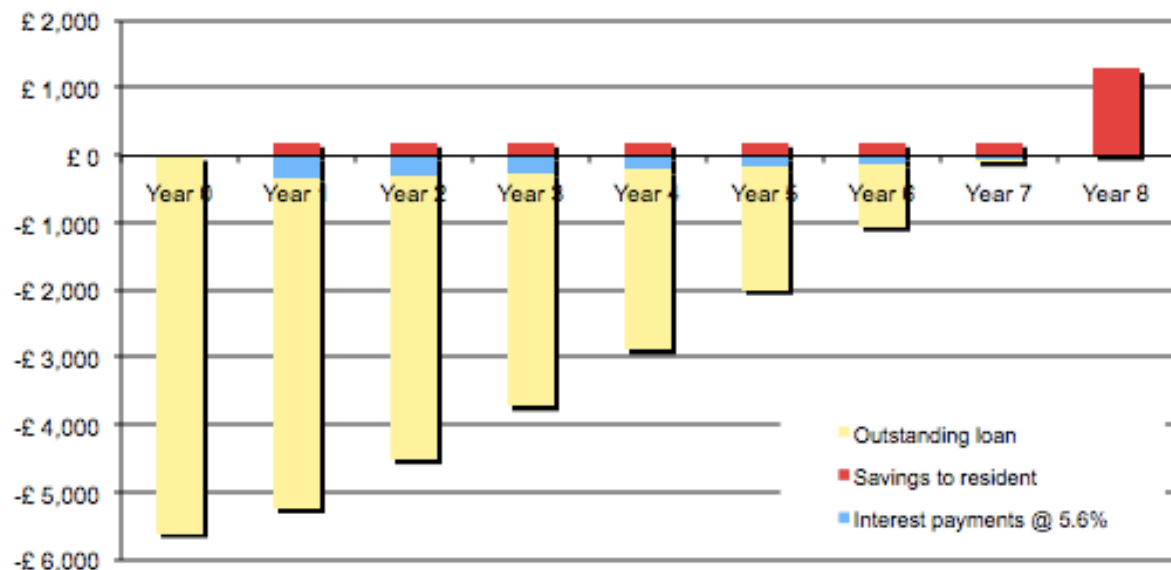
Draught-proofing	£ 2,000
Improved Loft Insulation	£ 600
Other Insulation	£ 200
CFL and LED lights	£ 150
New washing machine	£ 400
Heating control system	£ 250
Total	£ 3,600

Low carbon energy generation

Solar water heating system	£ 3,200
Grant	-£ 1,200
Total	£ 2,000

Total cost	£ 5,600
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New electricity bill	£ 500
New gas bill	£ 400
Net savings	£ 1,300



Cashflows	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Installation & maintenance	-£ 5,600	-£ 100	-£ 100	-£ 100	-£ 100	-£ 100	-£ 100	-£ 100	-£ 100
Interest payments @ 5.6%	£ 0	-£ 317	-£ 295	-£ 253	-£ 208	-£ 160	-£ 110	-£ 57	£ 0
Repayment	£ 0	£ 1,100	£ 1,100	£ 1,100	£ 1,100	£ 1,100	£ 1,100	£ 1,100	£ 0
Outstanding loan	-£ 5,600	-£ 4,917	-£ 4,212	-£ 3,465	-£ 2,673	-£ 1,833	-£ 943	£ 0	£ 0
Energy savings	£ 0	£ 1,300	£ 1,300	£ 1,300	£ 1,300	£ 1,300	£ 1,300	£ 1,300	£ 1,300
Savings to resident	£ 0	£ 200	£ 200	£ 200	£ 200	£ 200	£ 200	£ 200	£ 1,300

Note: Residents are not liable for the loan. The loan is made to the energy efficiency and solar water heating company.

