



CECODHAS Energy experts presentation

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Involving residents in C80 energy efficiency retrofit

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&

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The retrofit challenge in UK

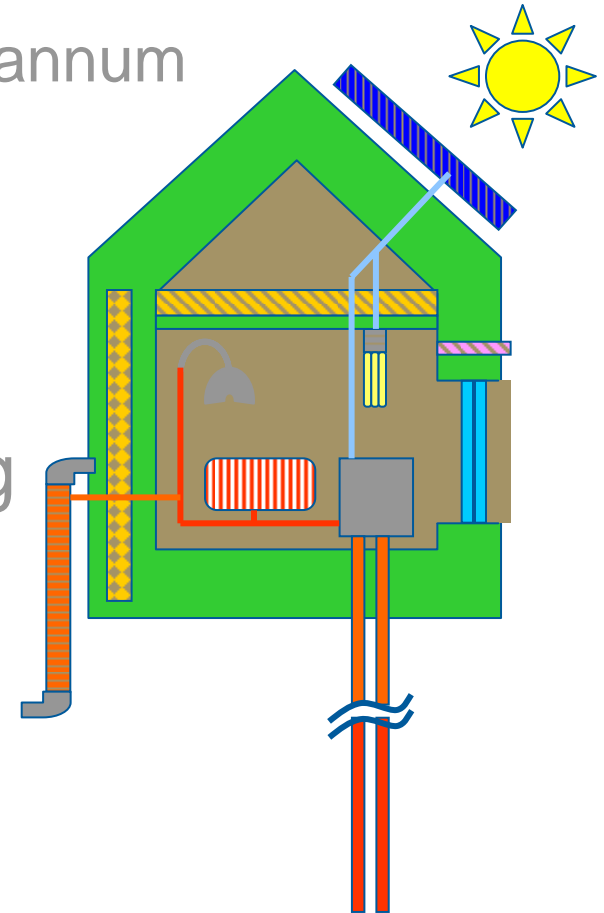
- 80% reduction in CO₂ required by 2050 (Climate Change Act)
- 26 million existing homes
- 85% of homes will still be in existence in 2050
- 27% total carbon emissions
- 500,000 whole house refurbishments each year to 2050
- 7 million C80 retrofits by 2020 (UK Government Heat and Energy Strategy ambition)





The barriers to meeting challenge

- Financial (approx 10 billion GBP per annum required)
- Identification of suitable whole house technical solutions
- Resident 'buy in' & understanding
- Skills and knowledge shortage
- Regulatory framework (especially financial)





Solutions to the challenge

- Sustainable long term financing with regulatory reform
- Successful pilot projects and research
 - Technology & Strategy Board 'Retrofit for the future' programme
 - £10 million launched in spring 2009 for 50 prototype solutions
- Full involvement of residents in process
 - From conceptual design phase
 - Through construction phase
 - To post completion monitoring, evaluation and feedback





Process of resident involvement *in relation to current C80 retrofit project*

- Identification of appropriate properties



Energy Efficiency Rating		
	Current	Potential
Very energy efficient - lower running costs		
(92 plus) A		
(81 - 91) B		
(69 - 80) C		
(55 - 68) D		
(39 - 54) E	55	65
(21 - 38) F		
(1 - 20) G		
Not energy efficient - higher running costs		
England & Wales	EU Directive 2002/91/EC	

*Retro-fit to 20 homes
(REEMA concrete PRC)*

- Initial option appraisal of feasible technical solutions



Resident involvement *in C80 project process continued...*

- Core energy efficiency package to reach 60% CO₂ reduction* (all 20 homes)
- Plus solar package to reach 80% CO₂ reduction* (3 empty units initially)
- First consultation with residents as a group
- Co-opt residents on to a project steering group
- Formulate resident questionnaire
- Second consultation on individual basis (fuel poverty check undertaken)



* *Regulated emissions, not total*



Resident involvement

in C80 project process continued...

- Regular communication / liaison with residents
e.g. community newsletter
- Construction phase commences - Open house
- Prepare home user manual for residents
- Briefings on completion of work
(explain monitoring process)
- Review of performance in use / resident satisfaction
- Encourage 'super residents' to participate in dissemination





Outcome: How C80 will be achieved Cost = 50,000euro / home

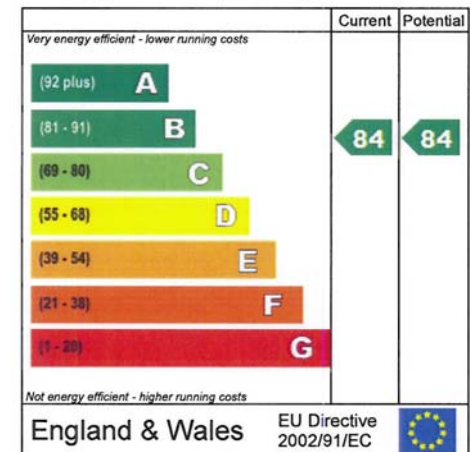
Scenario	Regulated Emissions			
	SAP 2005 Rating	EPC / SAP Band	Annual Regulated CO ₂ Emissions	Percentage Reduction in Regulated CO ₂ Emissions
			kgCO ₂ /yr	%
Baseline as existing	43	E	7,495	--
+ 100mm Phenolic wall insulation	61	D	4,826	36%
+ Improved air tightness	62	D	4,776	36%
+ Double loft insulation	63	D	4,599	39%
+ A-rated, condensing boiler	74	C	2,710	64%
+ compact fluorescent lighting	76	C	2,558	66%
+ New 'A' rated glazing	78	C	2,371	68%
+ heat recovery ventilation in wet rooms	78	C	2,343	69%
+ solar thermal 3m2	79	C	2,156	71%
+ PV, 1.2 kWp	83	B	1,830	76%
Sum of all measures	84	B	1,587	79%

Gas baseline C79% (total emissions* reduction C67%)
Electric baseline C85% (total emissions* reduction C76%)

* UK Government target for 2050 = 80%



Energy Efficiency Rating





GOLD AWARD

SHEERER UK financing model

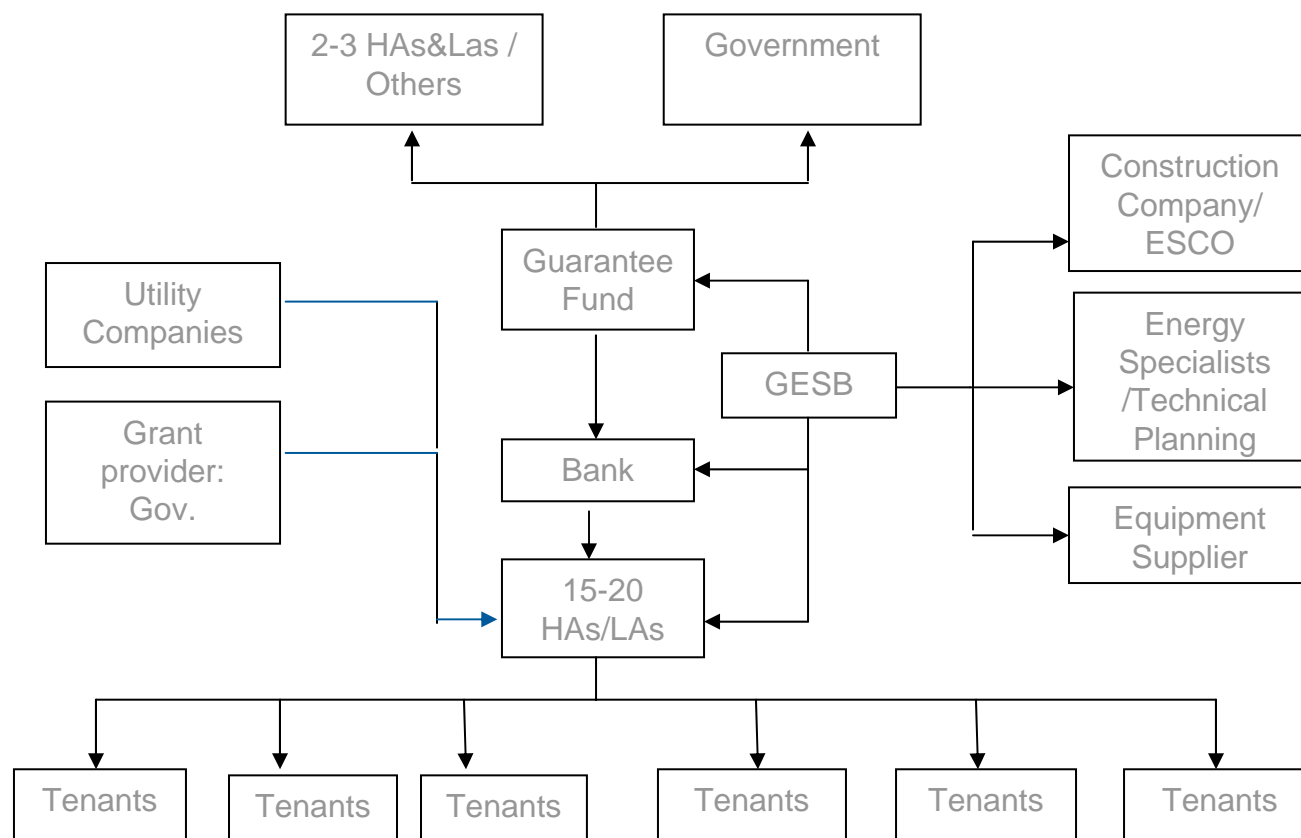
- Developing a mechanism for large scale retrofit programme
- Provides access to affordable funding
 - At sensible loan securities and with favourable interest rates
- Government guarantee fund
 - To satisfy lenders / mitigate their perceived risk
 - Cover costs in the event of default
- Shared energy savings between residents and landlord
 - Pay as you save scheme
- Residents fully integrated in process
 - Explanation of flexible package on household basis
 - How residents can influence cost saving through behaviour
 - Smart metering and billing for residents



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Organisation of SHEERER partners





Feedback on 'Generation Homes' project

- Project objective
 - To demonstrate significant household CO₂ emission reductions to 6 homes (target min 60%)
- Independent review currently being undertaken
 - Covers social, economic and environmental aspects with interviews of residents
- Initial study findings (based on 2 years post completion data)
 - CO₂ emission reductions in use: 49-83%
 - Running cost savings: neutral to 50%
 - Resident satisfaction interviews: June '09
- Learning to be published for transfer to future projects





National Housing Federation support

- Lobby work at national level to reconnect individuals with their energy consumption level
 - Smart-meters to be implemented in every home by 2020
- Ending unfair charges on energy prices for tenants on pre-payment meters
 - Pre-payment meter campaign
- Supporting housing associations' initiatives
 - Dissemination of good practice through conferences, briefings
 - Exploring ways of making good practice common practice



Thank you!

Questions and suggestions for developing approach?

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