

Energy efficiency financing

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CARBON DISCLOSURE PROJECT

Issues

Take-up risk

Cost of transaction; marginal savings; complexity

EE \neq emission reductions & energy savings

Re-financing risks: scaling up investment flows

- Low returns from *residential*
- Disaggregated investments
- Doesn't fit asset allocation models

Solutions

General

- Emission reduction incentives in supplier contracts
- Pooling loans into larger vehicles + asset-backed securities
- Energy service contracts

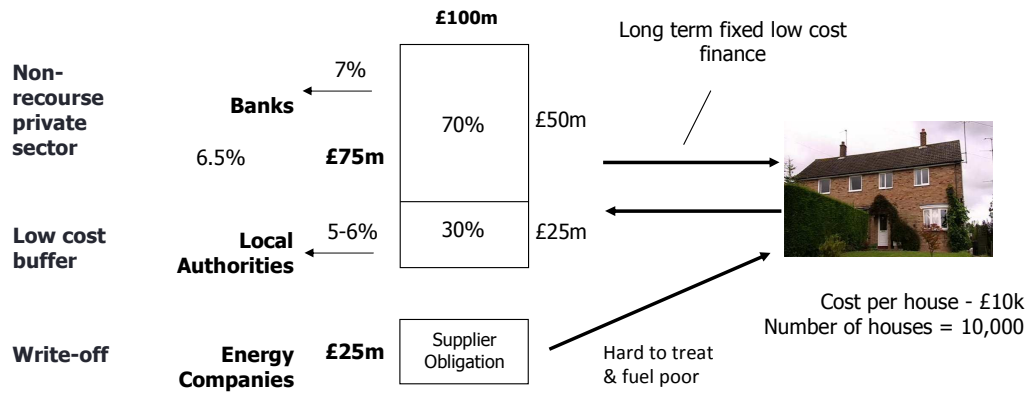
Residential

- Attaching loans to dwellings not householders
- Municipal locus = trust
- Blended finance: grants, carbon, loans
- One-stop-shop product packages
- Opt-out: “Yes, I’ll sign up” vs “No, I want participate”

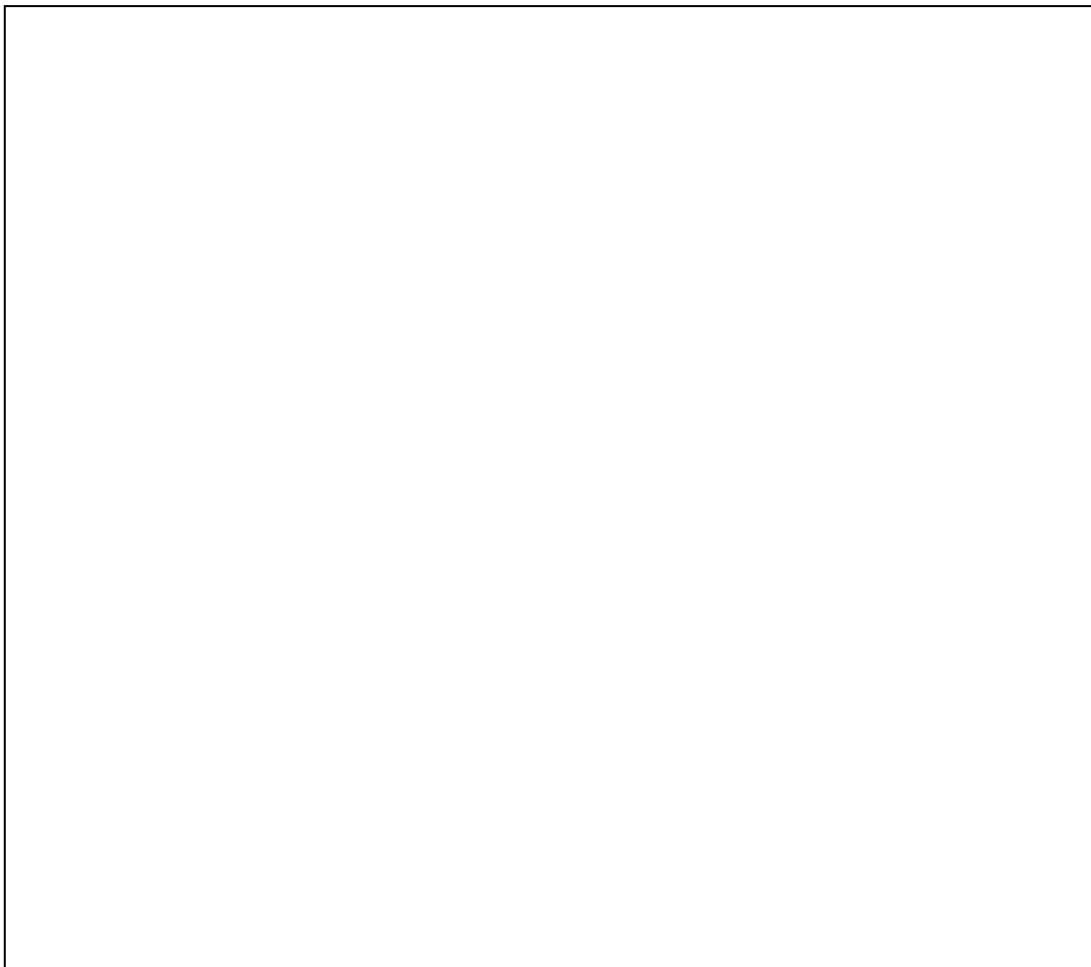
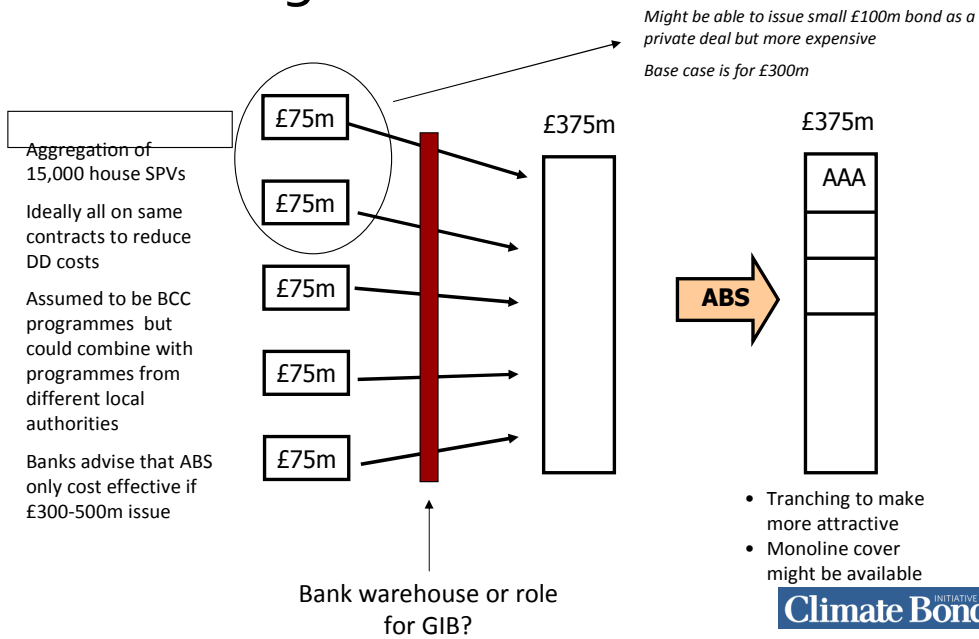
Investors

1. Size of investment opportunities on offer
 - Must be big
2. Size of market
 - Liquidity = take-up
3. Risk of default
 - Government real or implied guarantees
 - Reduced collections risk
 - Interest rate
4. Environmental integrity
 - Standards

Local Authority SPV



Refinancing – Asset Back Securities



Models for opt-out

District Heating Copenhagen

- Obligation to connect (33% 1970 to 98% 2008 of city heating demand)
- Whether you are connected or not, **you have to pay your share of the investment** in the district-heating network. This framework condition and the way it is enforced makes DH the far cheapest option for the consumers living in such areas. The basic idea behind this type of regulation is to make the consumer's choice of heating source in line with the most beneficial primary heating source for society. As a result of the obligation to connect, the total connection to DH in the municipality of Copenhagen has increased to 98 %.
- Heat supply act also stated that **heating companies are non-profits** – the price of heat is the cost of the heat production and the distribution to the user
- Tradition of forming collectives in Danish society (co-ops)
- Communication efforts: call-centre; website; customer ambassador (ombudsman); billing information, education campaigns
- Reasonable customer satisfaction with agency 60%

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Copenhagen District Energy climate award

http://www.google.com/url?sa=t&source=web&cd=1&sqi=2&ved=0CBkQFjAA&url=http%3A%2F%2Fwww.econ.kuleuven.be%2Ftem%2Fjaargangen%2F2001-2010%2F2003%2FTEM2003-3%2F06_Smeesters.pdf&ei=cIJZTfevJMiYhQec26nEBA&usg=AFQjCNHou9a-pD7e8BODe9JhS22i--BgfQ

Mandatory Recycling Netherlands

- The overwhelming value underpinning action was ‘a sense of civic duty’ or ‘being a good citizen’ like paying taxes or obeying traffic laws
- Avoiding fines or environmental values were secondary
- 3 levels of constraints encountered
 - Knowledge gaps: I don’t know how to do it. I dunno what to do with X garbage item. Other aspect is the lack of knowledge around the consequences of negative action
 - Situational constraints: inner-city high rises lack of space to have proper sorting, leads to no habit formation.
 - Unfairness beliefs: nature of programmes differed from area to area, they considered responsibility lumped on consumer rather than manufacturer and wanted greater penalties for free-riders.

➤ A WELL MARKETED AND POLICED LOCAL AUTHORITY OPT-OUT SCHEME CAN PROVIDE GREATER UPTAKE AS LONG AS CONSUMER BELIEF CONSTRAINTS ARE TACKLED

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Smeesters 2003 Consumer motivation to recycle when recycling is mandatory
http://www.google.com/url?sa=t&source=web&cd=1&sqi=2&ved=0CBkQFjAA&url=http%3A%2F%2Fwww.econ.kuleuven.be%2Ftem%2Fjaargangen%2F2001-2010%2F2003%2FTEM2003-3%2F06_Smeesters.pdf&ei=cIJZTfevJMiYhQec26nEBA&usg=AFQjCNHou9a-pD7e8BODe9JhS22i--BgfQ

Opt-out pension contributions US

- US companies begin automatically enrolling employees in 401k schemes
- Uptake increases from 20% to 90%
- Evolved to counter too low initial contribution rates to include a rising contribution on the basis of a wage rise
- EE could replicate with a lower unit cost for energy use under certain amount, or much higher if over a reasonable amount

Nash (2007) Opt in or opt-out?

http://199.169.211.101/publications/research/region_focus/2007/winter/pdf/feature2.pdf

<http://cacm.acm.org/magazines/1999/4/7922-building-consumer-trust-online/fulltext>

Houston power to people

- City council sends letter to targeted households resulting in 10% uptake
- Then organise community groups to do block walks to talk to neighbours
- Block party with food and music
- 40-80% uptake rates depending on neighbourhood

Hamilton 2009:

http://erg.berkeley.edu/info/thesis/Fuller_2009_ResiFinancing%20ERG%20Final%20Paper.pdf