

camco

NWEF

Green Deal: What can it do – and what should you do?

Arnout Andrews, Principal Consultant

About Camco

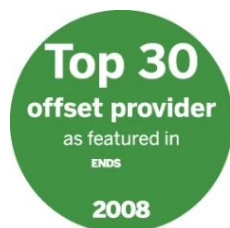
- 20 years, 250 people, 7 countries
- Experts in carbon finance and clean energy project development
- Project Developer of the Year, Transaction of the Year
- Raised >£50m for low carbon ventures and projects
- 140million tonnes CO₂ under contract

// Sustainable Housing
AWARDS 2011
WINNER



Camco Green Deal Pedigree

- **Policy insights** from Green Deal working groups
- **Thought leadership** from Existing Homes Alliance and UK-GBC steering groups, EST Finance Innovators Group, EEPH
- **Communications expertise** – PAYS Task Group, LACM
- **Credibility with investors** – AIM listing, carbon credits, investments, Co-op Bank due diligence
- **Understanding of whole market** and **Experience of delivery** – Retrofit SE, Retrofit Reality, FutureFit, ESCos, PV programmes, TSB
- **Access to models** – North London, NHF, FutureFit, Nottingham CC, Efficiency East Midlands, etc.



What is Green Deal?

- GD comes from the very **simple** PAYS (Pay As You Save) **concept**. There is finance provided for energy measures – and the capital cost of the measures is repaid from the energy bill savings that the measures generate.
- Making this work in practice with long term payback periods gets very complex!

Does Green Deal Work?

Does Green Deal Work?

- Yes – just a question of to what degree.
- Green Deal – especially with other (new) funding & finance programmes will create some new opportunities to deliver energy carbon and financial savings (and jobs).

What Can Green Deal Do?

- Jobs
- CO₂
- Energy bill savings
- Fuel poverty

What Can Green Deal Do?

- £14 billion worth of private sector investment in home energy improvements over the next decade – Chris Huhne

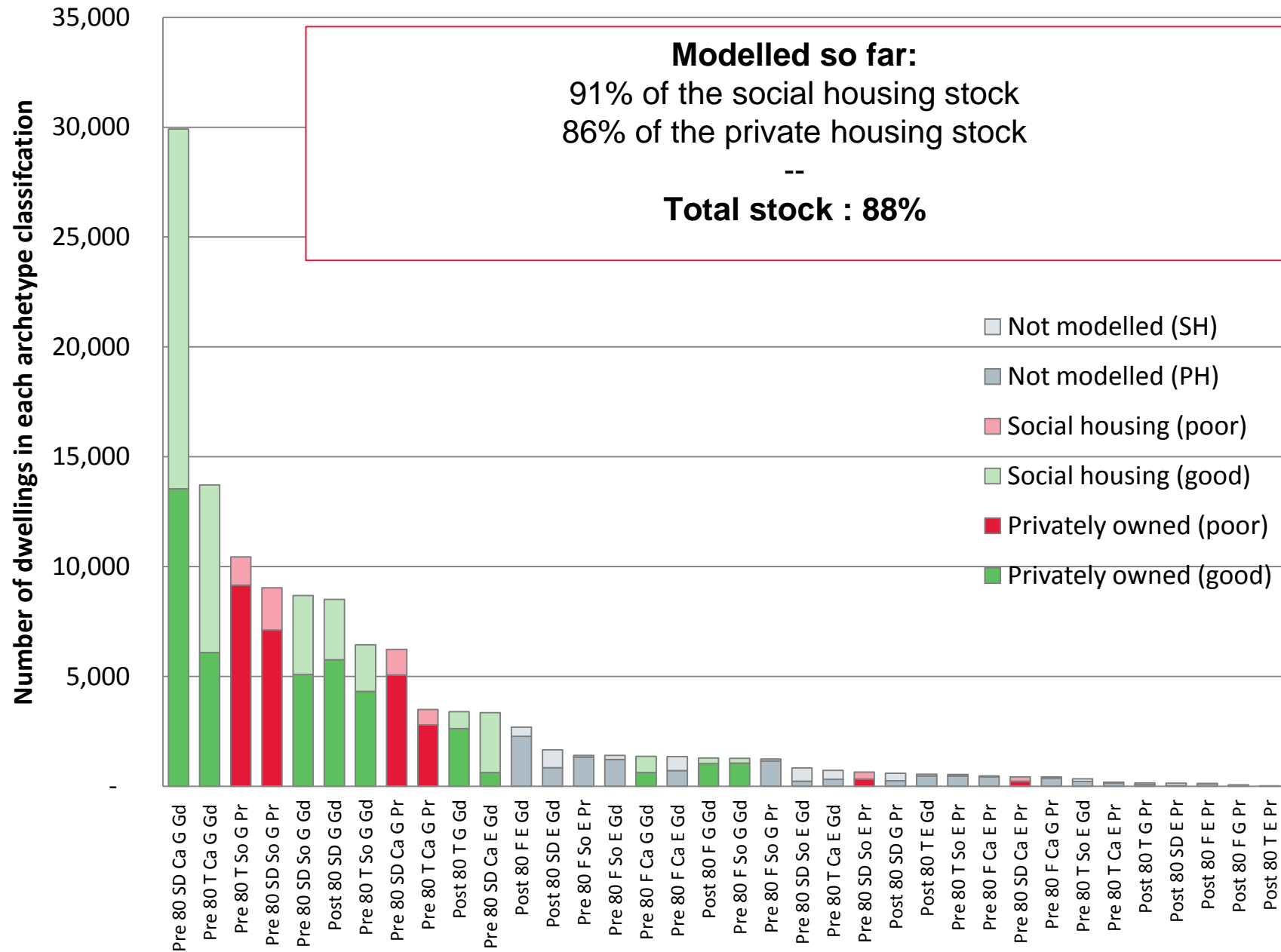
What Can Green Deal Do?

- What does that really mean for individual houses and households?
- This is where things get a little more complicated!

Modelling Green Deal

- Stock data (or estimate)
- Archetypes
- Measures (in order) for each archetype
- Parameters for modelling
- Economic viability (technical potential)
- Programme level
- Financing structures and options
- Action plan

Archetypes (Nottingham)

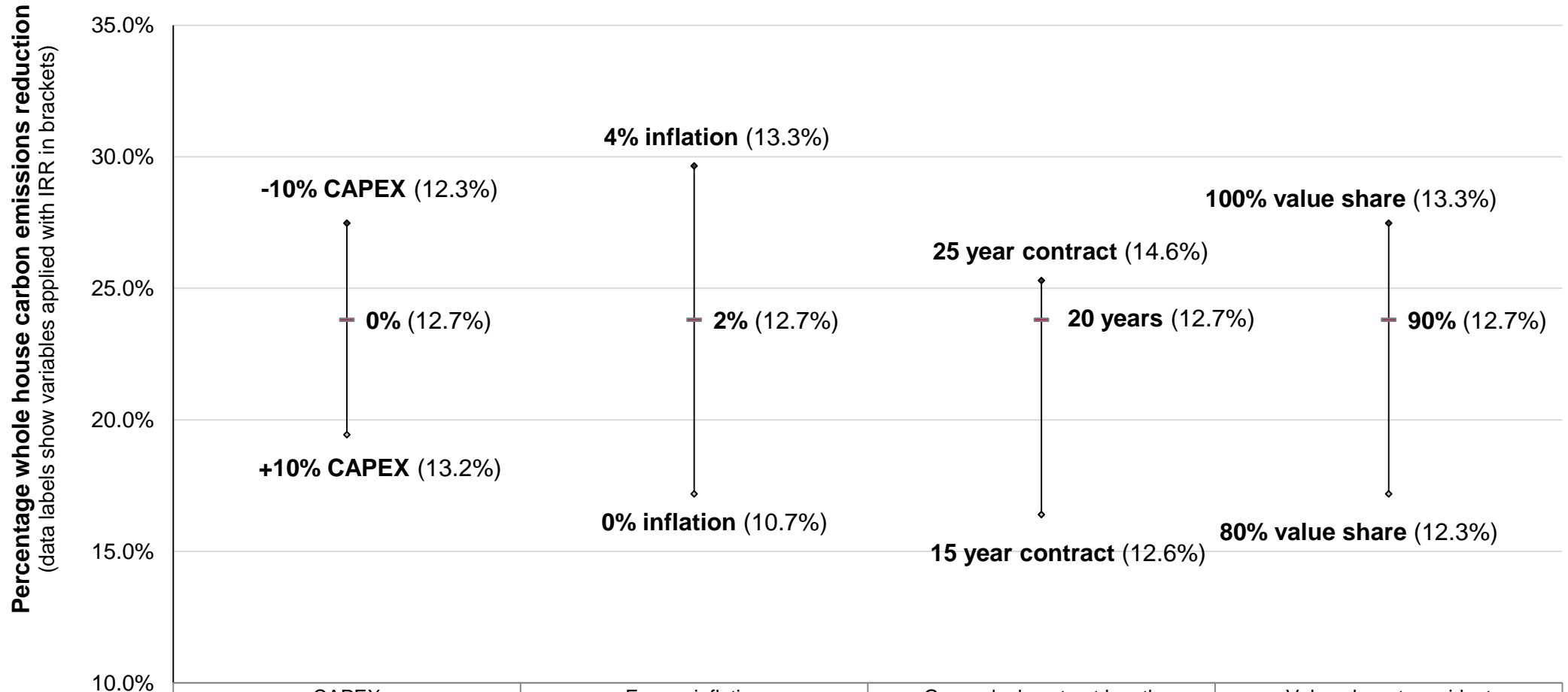


Modelling Green Deal: Parameters

- **Cost of capital** excluding operating margin (Discount rate) 6%
- **IRR** threshold of 7%
- Annual **energy price inflation**: 2%
- 20 year **repayment term**
- 90% of energy bill savings to investor, 10% to the householder (**value share**)
- **Capital costs**
- No **comfort take**
- Replacement cycles and maintenance costs
- SAP 2005 modelled energy savings

Sensitivity analysis of dwelling level results

IRR sensitivity analysis (with 7% IRR threshold)



	CAPEX	Energy inflation	Green deal contract length	Value share to resident
♦ Low scenario	27.48%	29.65%	25.30%	27.48%
— Base case	23.80%	23.80%	23.80%	23.80%
♦ High scenario	19.43%	17.18%	16.40%	17.18%

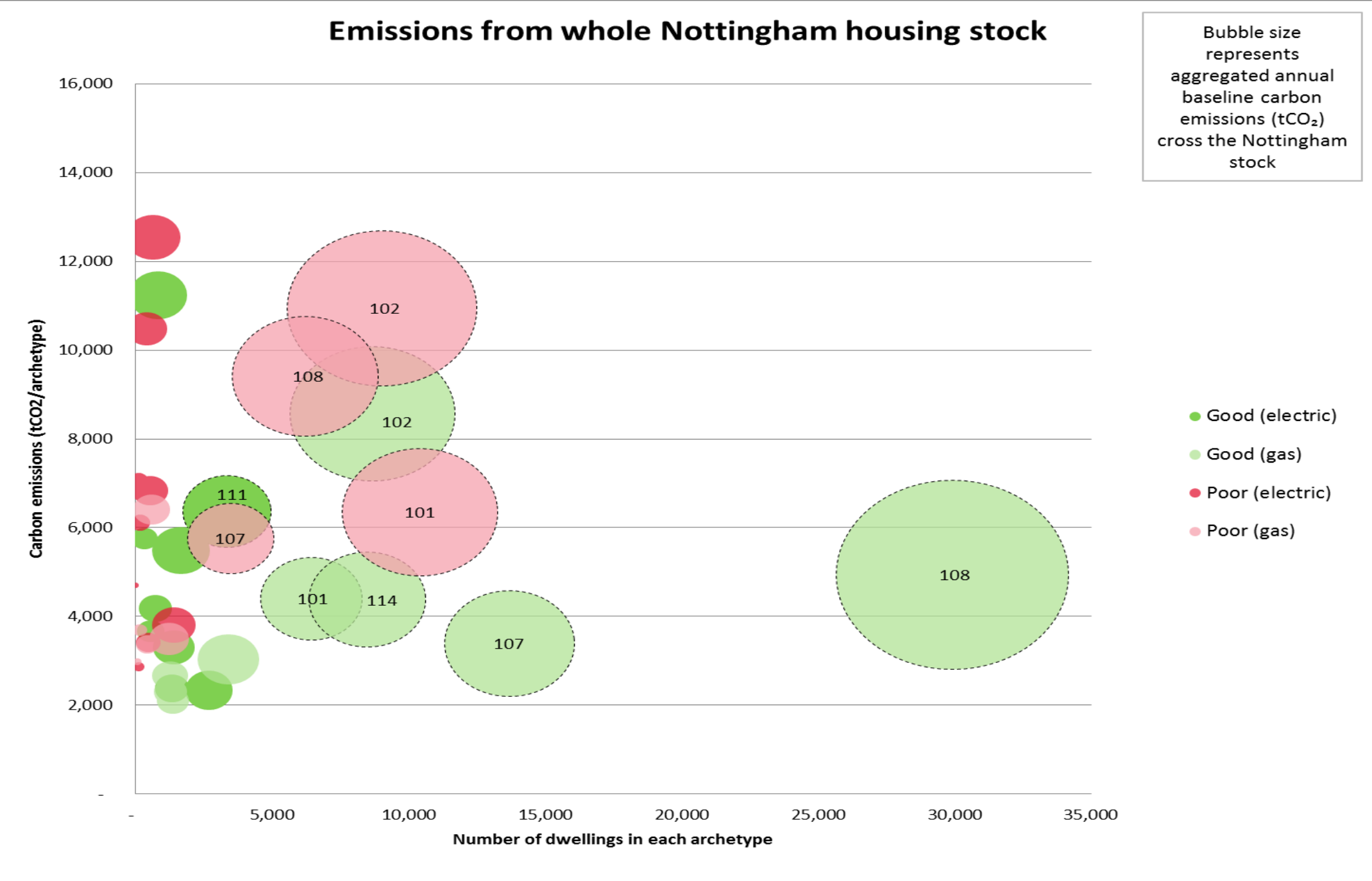
Illustration of Sensitivity

Archetype	Package	Capital costs	IRR	NPV	Carbon emissions reduction
		£	%	£	%
108 Good	Loft insulation top-up, Primary pipework insulation, Low-e light bulbs, Reduced air infiltration	£ 495	7.0%	£ 42	3%
108 Poor	Loft insulation (Poor - 60mm) Cavity Wall insulation Foam insulated DHW cylinder Primary Pipework insulation Low energy light bulbs Heating controls Double glazing Draught proofing - to 10m ³ /m ² .h Internal Insulation Reduced infiltration to 5m ³ /m ² .h Condensing boiler replacement Floor Insulation Insulated doors	£ 15,620	7.4%	£1,951	63%

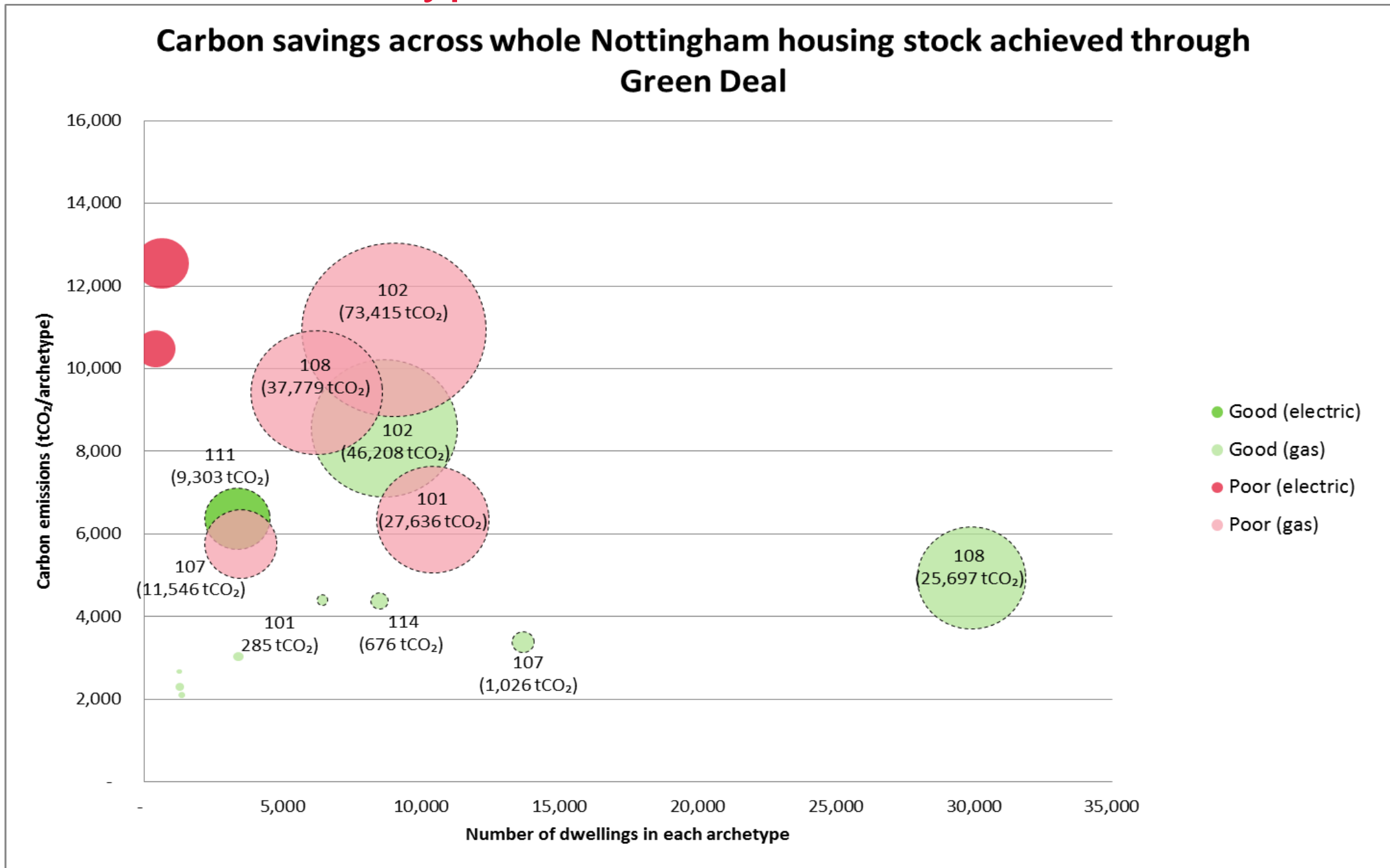
Impact on individual houses

	CAPEX	Percentage carbon savings	£s saved by residents in Year 1
Good Homes	£110 - £10,300	1% - 54%	£2 - £113
Poor Homes	£3,870 - £29,500	28% - 78%	£ 43 - £370
Weighted averages	£3,018	17.2%	£38

Results in archetypes



Results in archetypes



Green Deal: Fuel Poverty Cure?

Archetype	Bill Before	Bill After 10%	Saving 10%	Saving 50%	CO2 10%	CO2 50%
108 cav, gas Poor Pr	£2,380	£2,241	£139	£520	61%	46%
108 cav, gas Good Pr	£1,339	£1,337	£2	£0	1%	0%
102 Solid, gas Poor, Pri	£2,741	£2,554	£187	£213	70%	16%
102 Solid, gas, good, Pri	£2,192	£2,078	£114	£0	53%	0%
111, cav, elec, good, Pri	£2,409	£2,323	£86	£0	36%	0%

- Caveat – not from latest version of tool – illustration only.
- 10% value share to household doesn't reduce bills much
- Effects are varied – not simple
- Need to reconstruct the calculation for householder saving value (as IRR is the moving variable - further analysis?)
- Fuel poverty or CoDAE target in implementation (single pensioner target c.£1,079?)
- Savings to householders limited by viability (Note: ECO support)

Why is Green Deal Important?

- Jobs
- CO₂
- Energy bill savings
- Fuel poverty

What Should You Do?

- Make a decision
- Be proactive

The Difference NCC Can Make

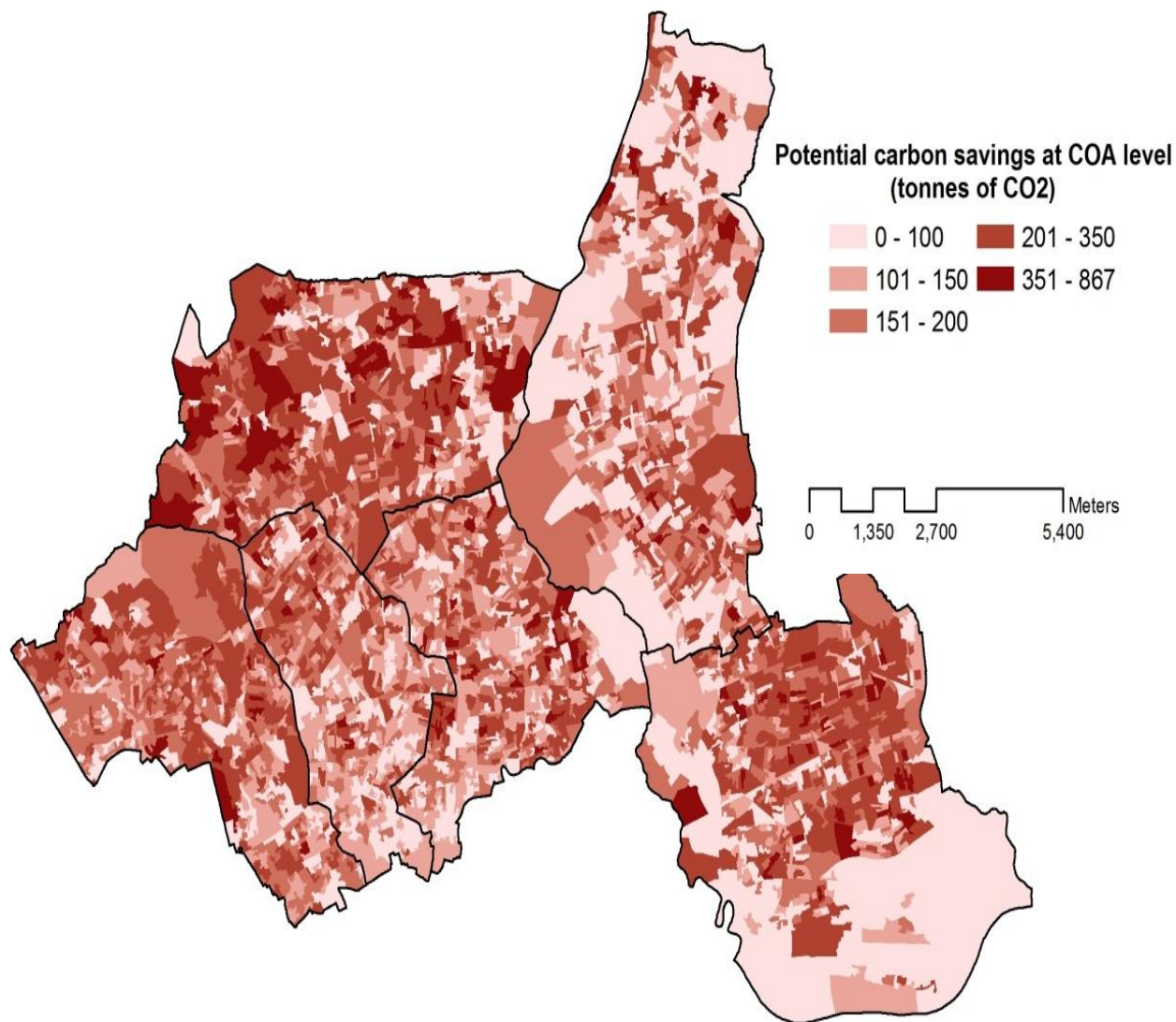
	Total CAPEX (£m)	Total tCO2/yr	Tenant savings over GD lifetime (RPI 2%)	Man-years of employment
NCC corporate (7% IRR, 1% uptake per annum)	£52.28 m	21,900	£13.26m	496
Public SPV (8% IRR, 0.75% uptake per annum)	£31.58 m	14,293	£8.63m	324
GD provider SPV (9% IRR, 0.5% uptake per annum)	£16,33 m	8,173	£5.02m	185

What Role?

- Nothing – leave to market
- Promote the concept
- Promote a partner[s]
- Procure a partner
- Share investment
- You are the investor

Making a difference

- Better drivers
 - For wider local benefit
 - For householder benefit
- Better take up
- Lower cost finance(?)
- Targeting effort
- Promoting local employment



Make a Plan

- Understand the potential
- Make an informed decision about your role
- Make a plan!

Thanks

Arnout Andrews

Principal Consultant
Camco

m: +44 (0)7810 825 603

e: arnout.andrews@camcoglobal.com

The Workstation, Paternoster Row
Sheffield, S1 2BX

www.camcoglobal.com