

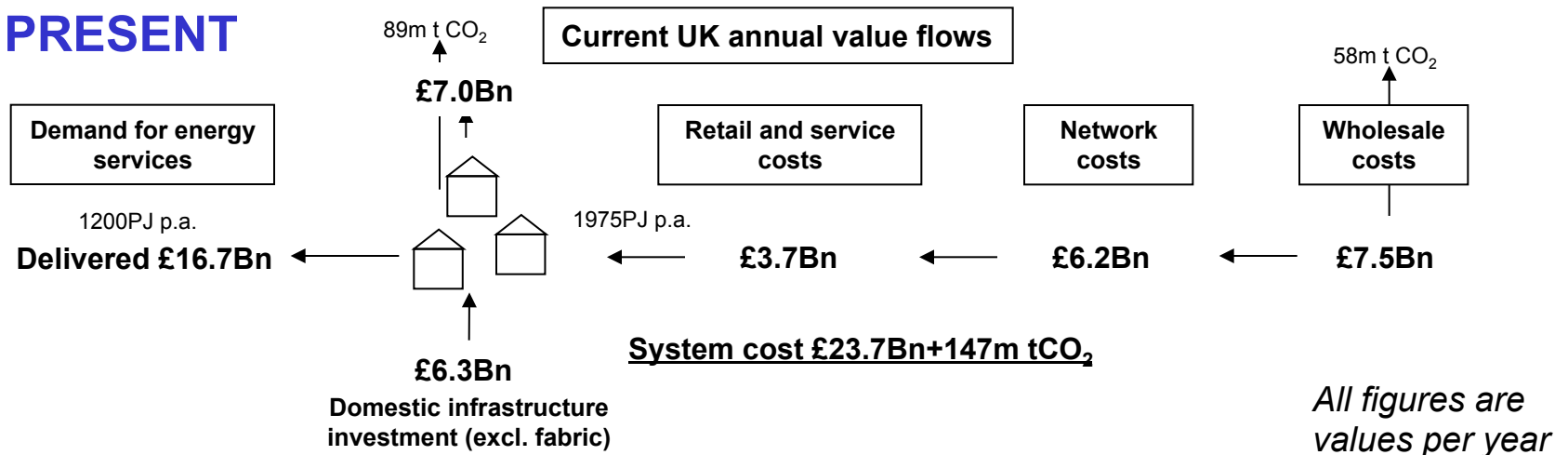
Edge Debate 24 : 42

Energy step change – the view from the future

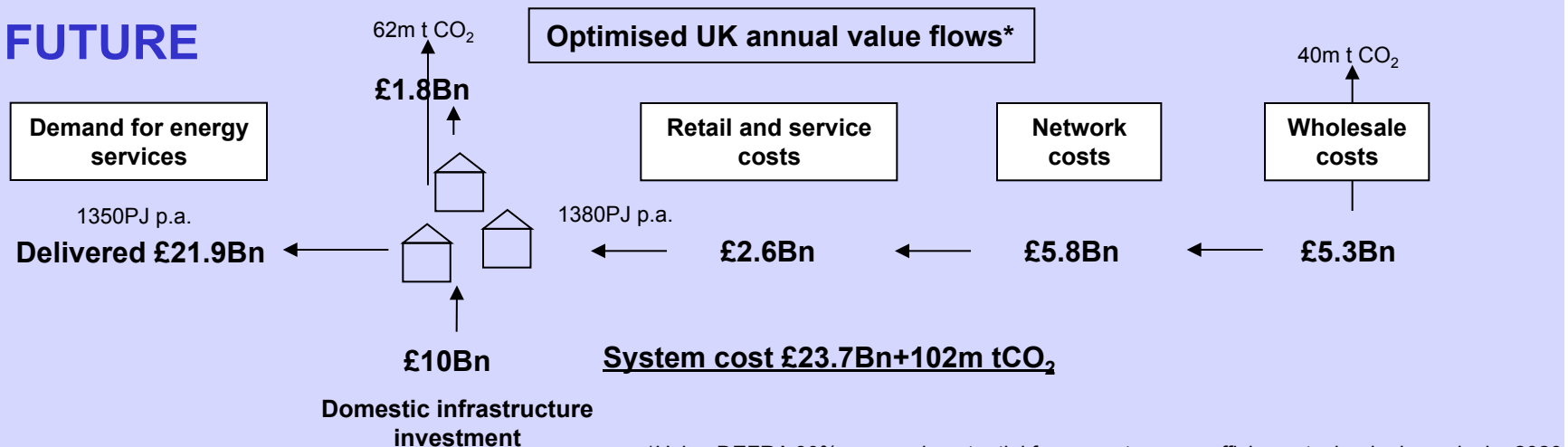
Matthew Rhodes

There are two ways of running the domestic energy system

PRESENT

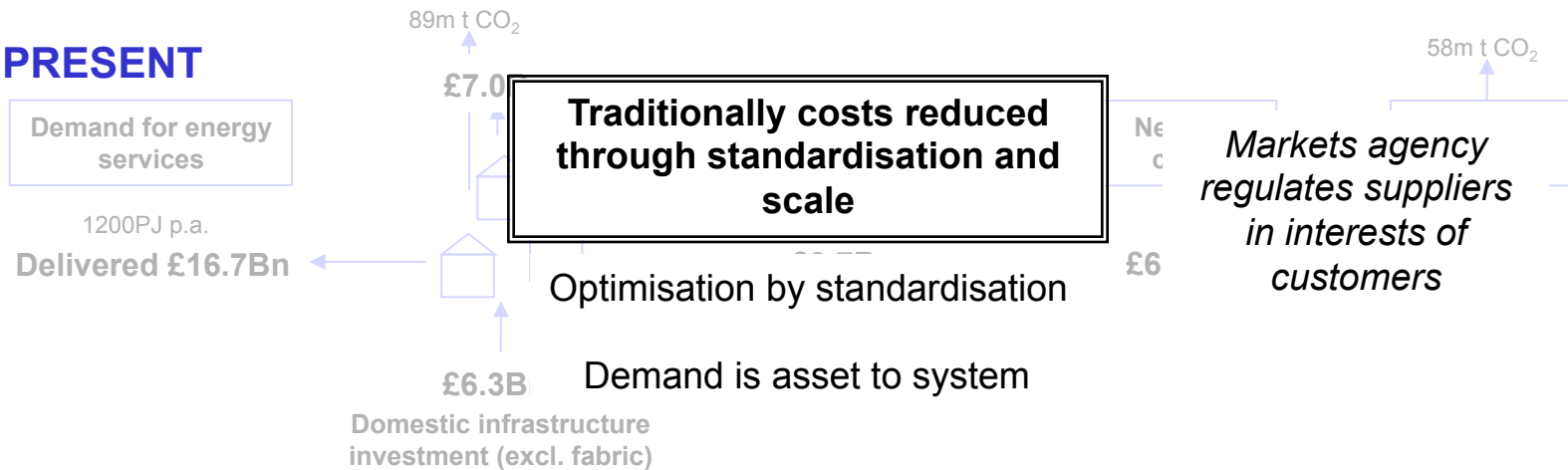


FUTURE

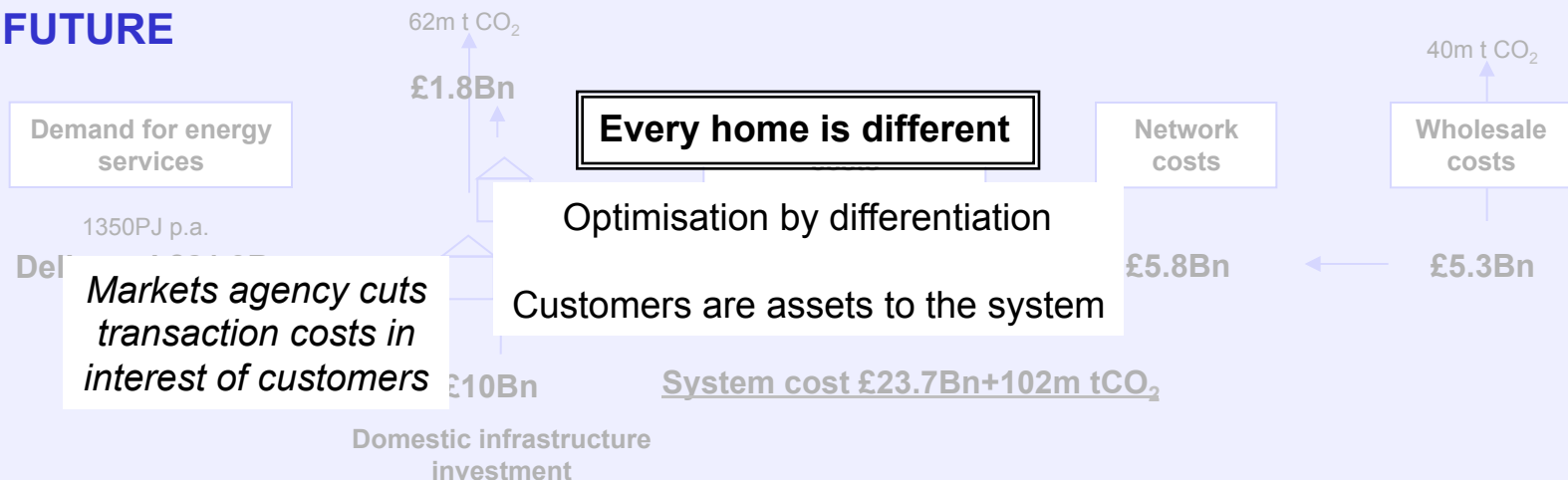


The problem is that one works best as a regulated, centralised system and the other as a localised free market

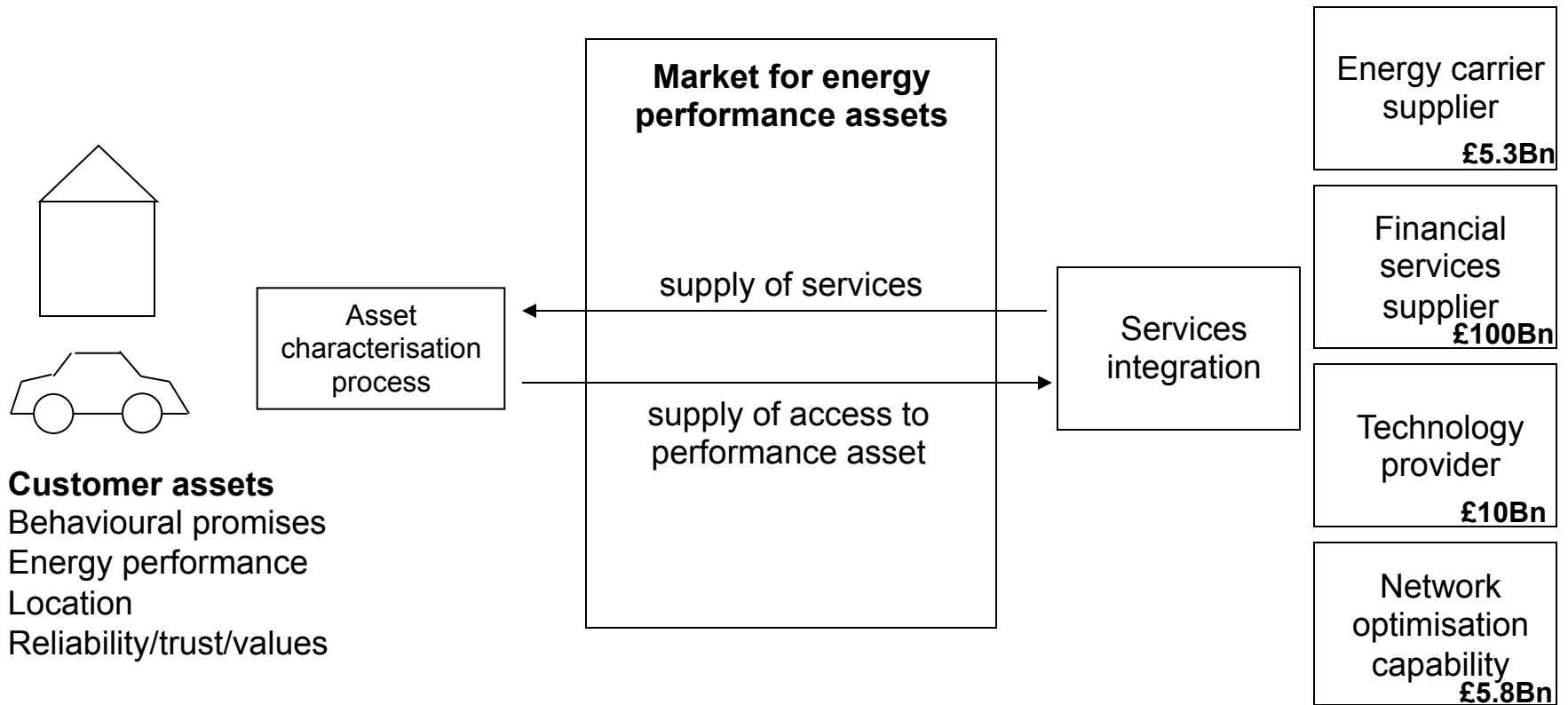
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FUTURE



By thinking from the future we can see what is needed



cf. London Stock Exchange - £150m p.a. to run. 90k terminals and 59m trades 2700 companies

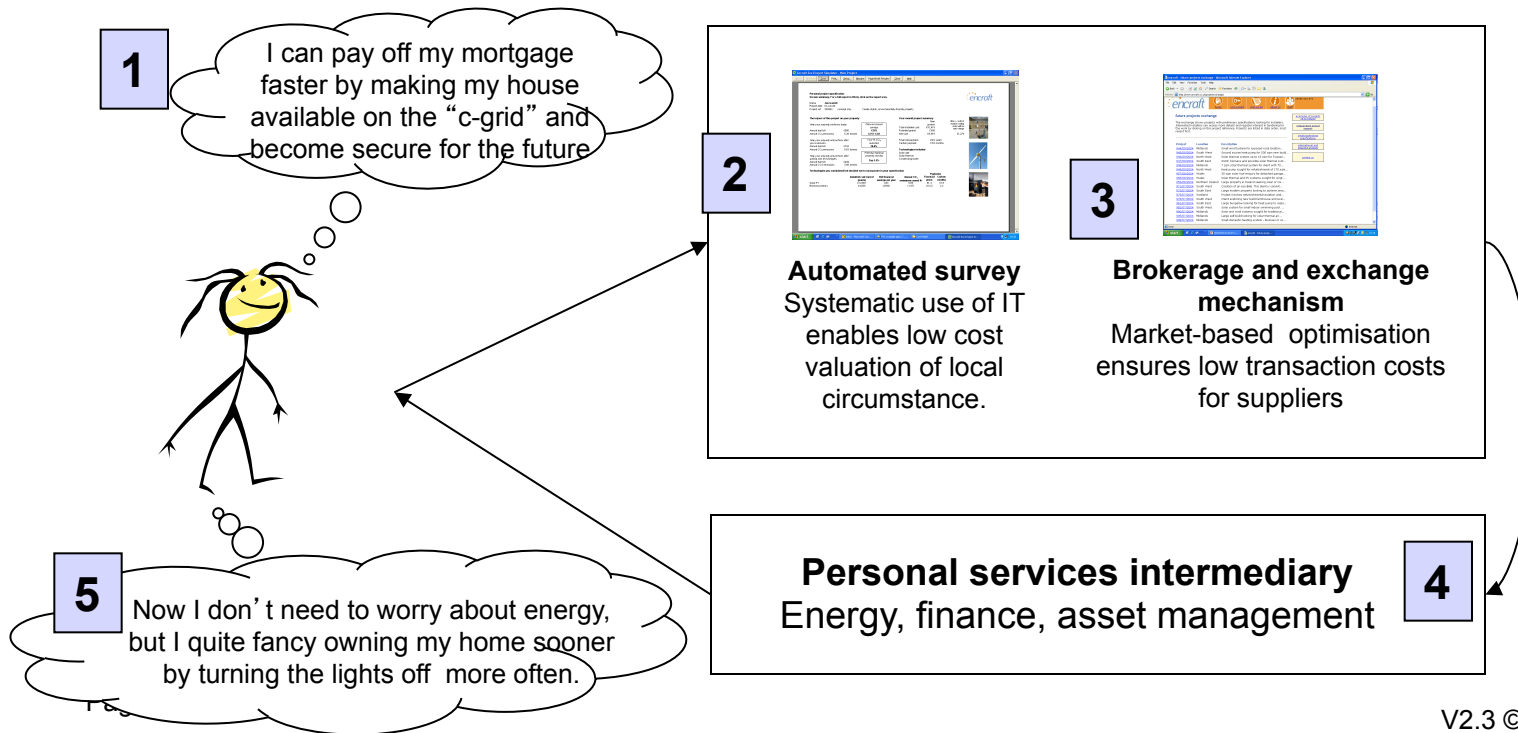
From a customer perspective it has to be very simple

Products and services

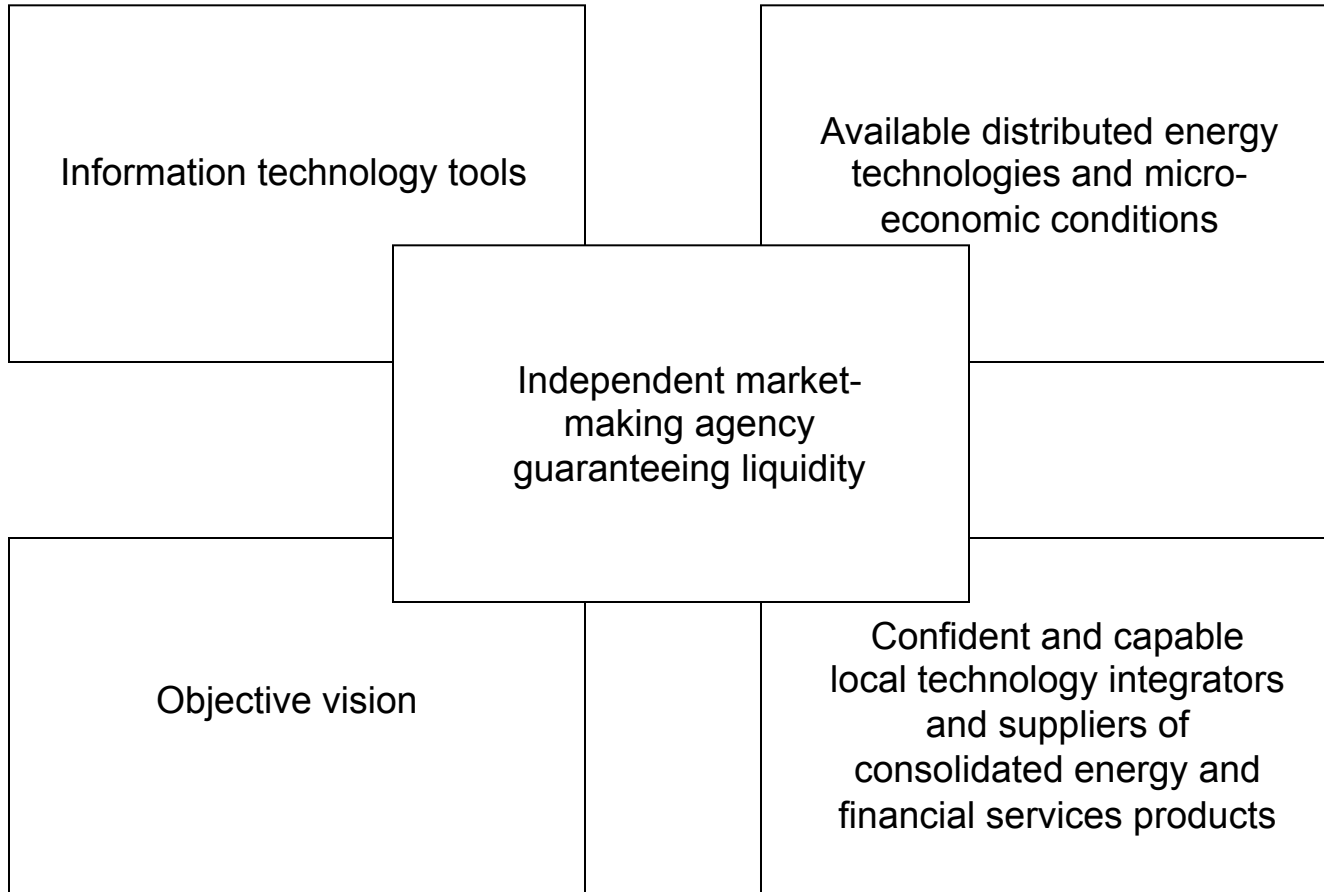
Energy mortgages – flexible payments reward energy-optimised behaviours

Market mechanism (“c-grid”) – recognises value of optimally-located and motivated energy performance assets

Combining energy and financial services creates incentives for individual customers to raise their hands



Making it happen



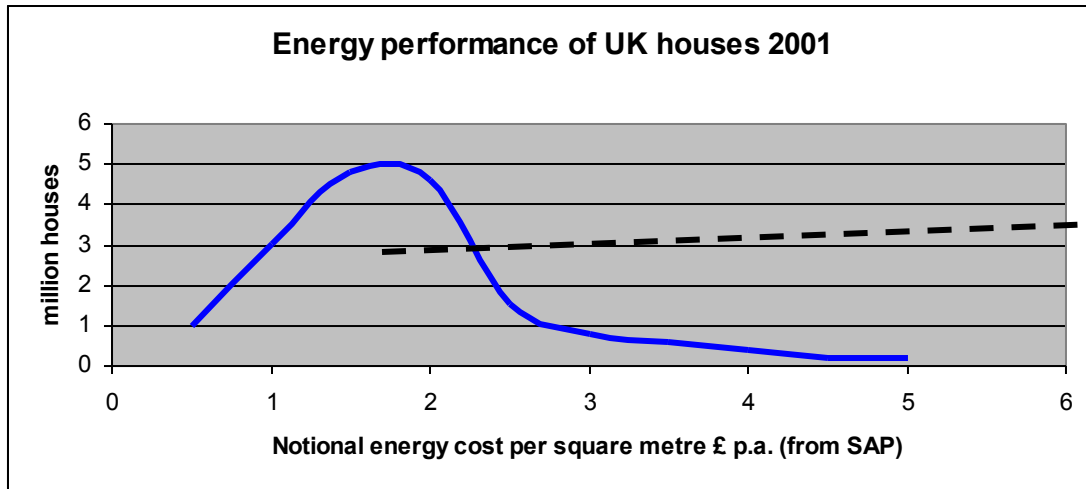
End of slides

Example costs of energy at point of use for one house in Smethwick

Technology	Capacity	Annual output MWh	Capital costs*	Annual running costs	Life (yrs)	Cost per kWh (pence)	Price to consumer p per kWh
Cavity wall insulation	0.6kW	4	£250	0	50	0.1	0.1
Biomass	11kW	8.75	£2.8k	£200	15	4.4	4.4
Gas heating	11kW	8.87	£1.7k	£300	15	4.7	4.7
Micro-CHP	8kW/1kW	9.1	£3k	£300	15	5.5	5.5
Energy efficiency (top)	250kW	1600	£4.8M	0	50	6.0	6.0
Nuclear	1600MW	11165000	£2Bn	£66M	40	1.0	7.0
Clean coal IGCC	480MW	2988480	£480M	£23M	40	1.2	7.0
Small wind	2kW	4	£4.5k	£100	25	7.0	7.0
Wind onshore	1.8MW	3000	£1.8M	£30k	25	3.4	7.5
Solar water	1kW	1	£1.6k	£20	25	8.4	8.4
Solar PV	2kW	1.55	£6.6k	£10	25	17.7	12.7

*net of grants and subsidies

We know the opportunities are out there



c-grid....

Valuing and making visible potential, objectively



e.g., 4 bed detached 1970 family home.

Traditional model

New model

25 yr mortgage £100k
25 yr energy costs £39k

25 yr mortgage £104k
25 yr energy costs £24k

Monthly services payments
£650 finance, £130 energy - £780
6% cost of capital, no energy inflation

Monthly services payments
£772 (£678+£94)
+motivation

Measure

investment

impact on chart

Sample measures

Cavity wall insulation
Solar thermal
Microgeneration

<£1000
<£3000
£1000-£10000



It's all about finding those who can gain most first, expanding scope as costs fall and benefits rise.