

Costs



December 2009

What is the cost of an MP3 player?

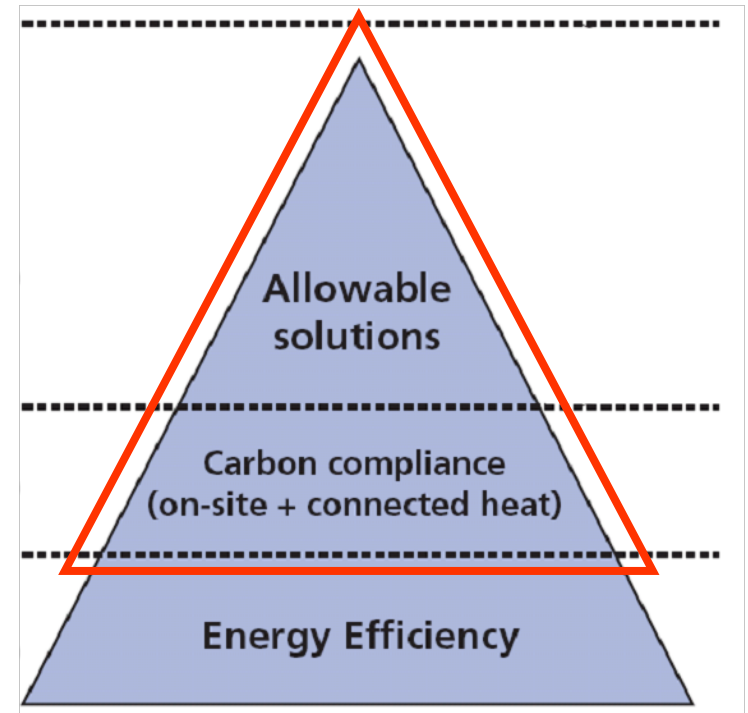


Overview

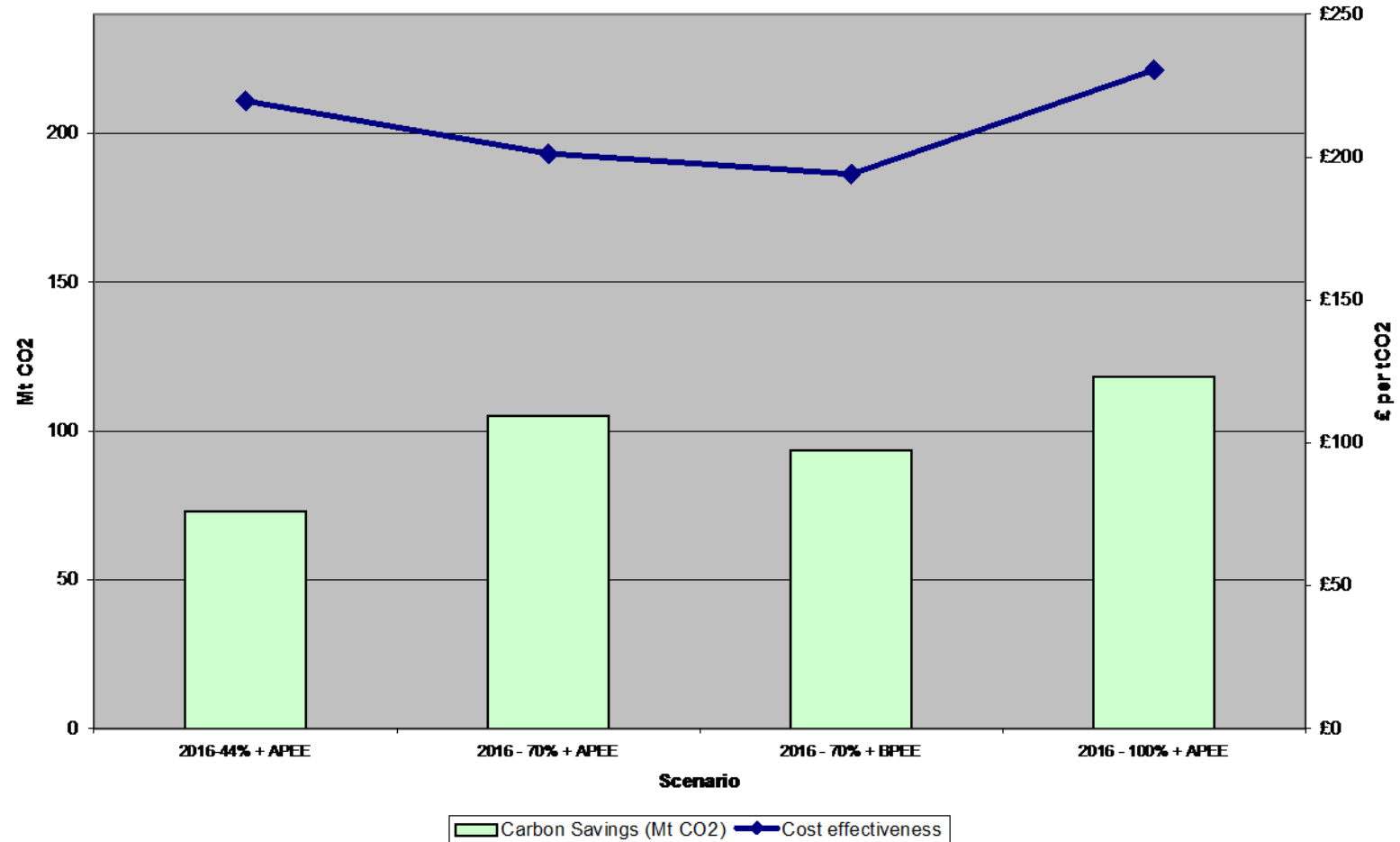
- Carbon compliance and allowable solutions
- Part L 2010
- Update on CfSH costs
- Are regulations driving low cost solutions?

Zero carbon homes

- Energy efficiency first 25-30%
- Carbon compliance to 70%
- Allowable solutions to +150%

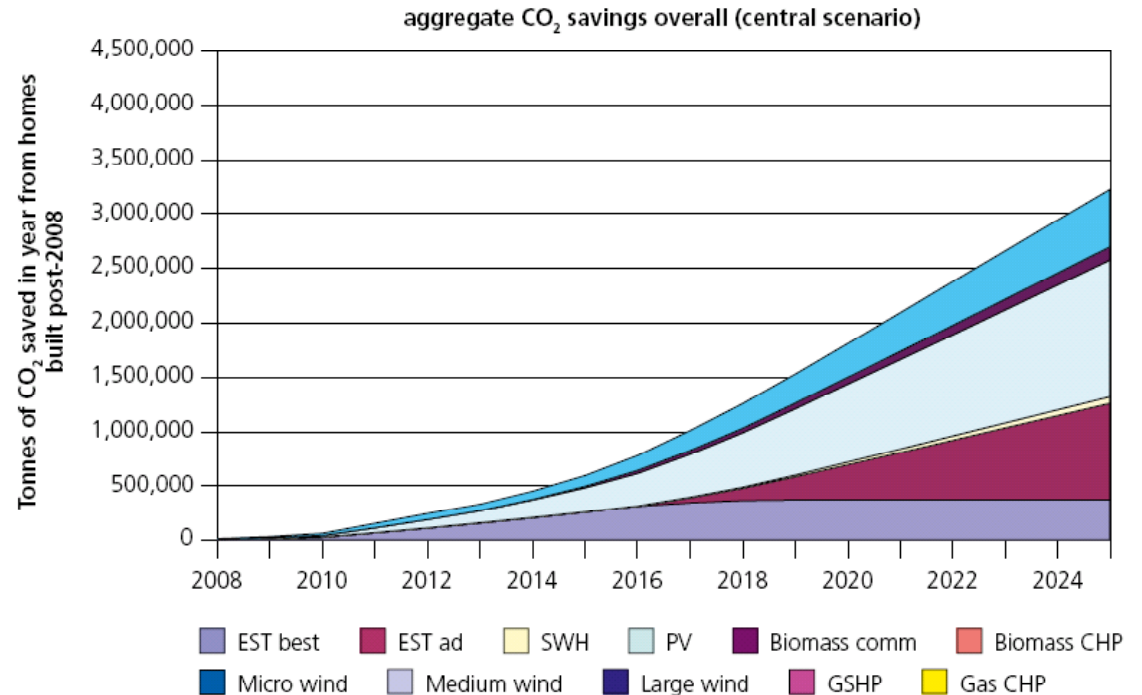


The carbon compliance level



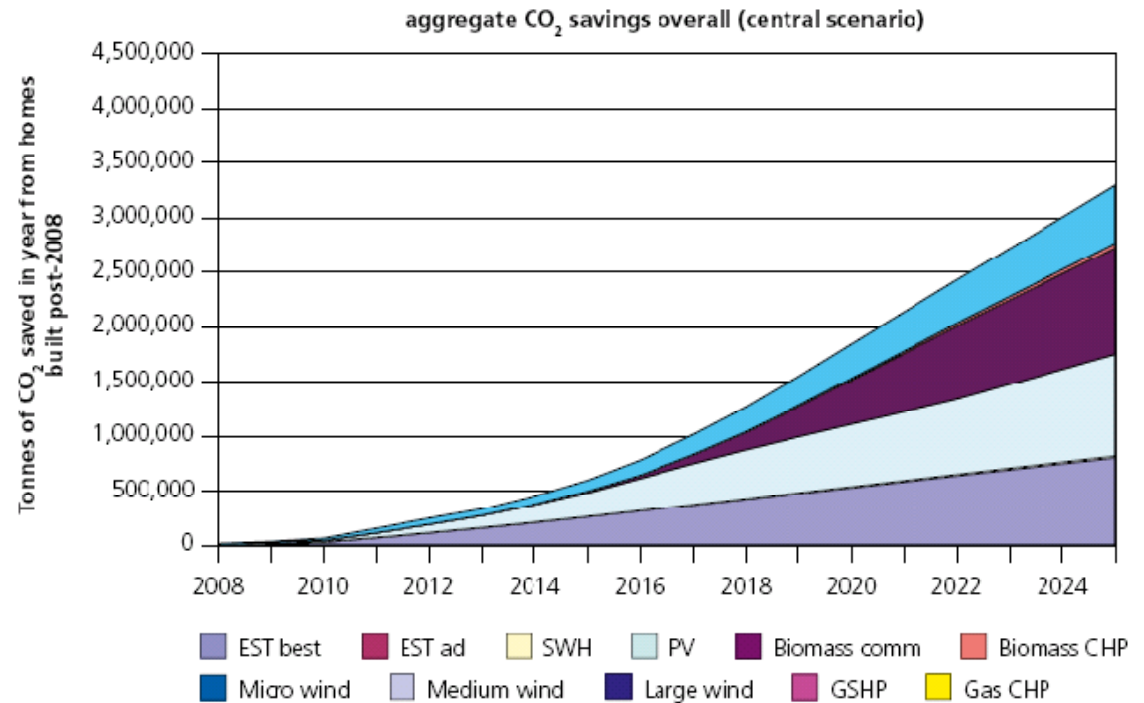
How is the carbon compliance level achieved

- Assumes advanced practice EE is mandated
- After energy efficiency, savings dominated by photovoltaics
- Some role for biomass, solar water and large wind

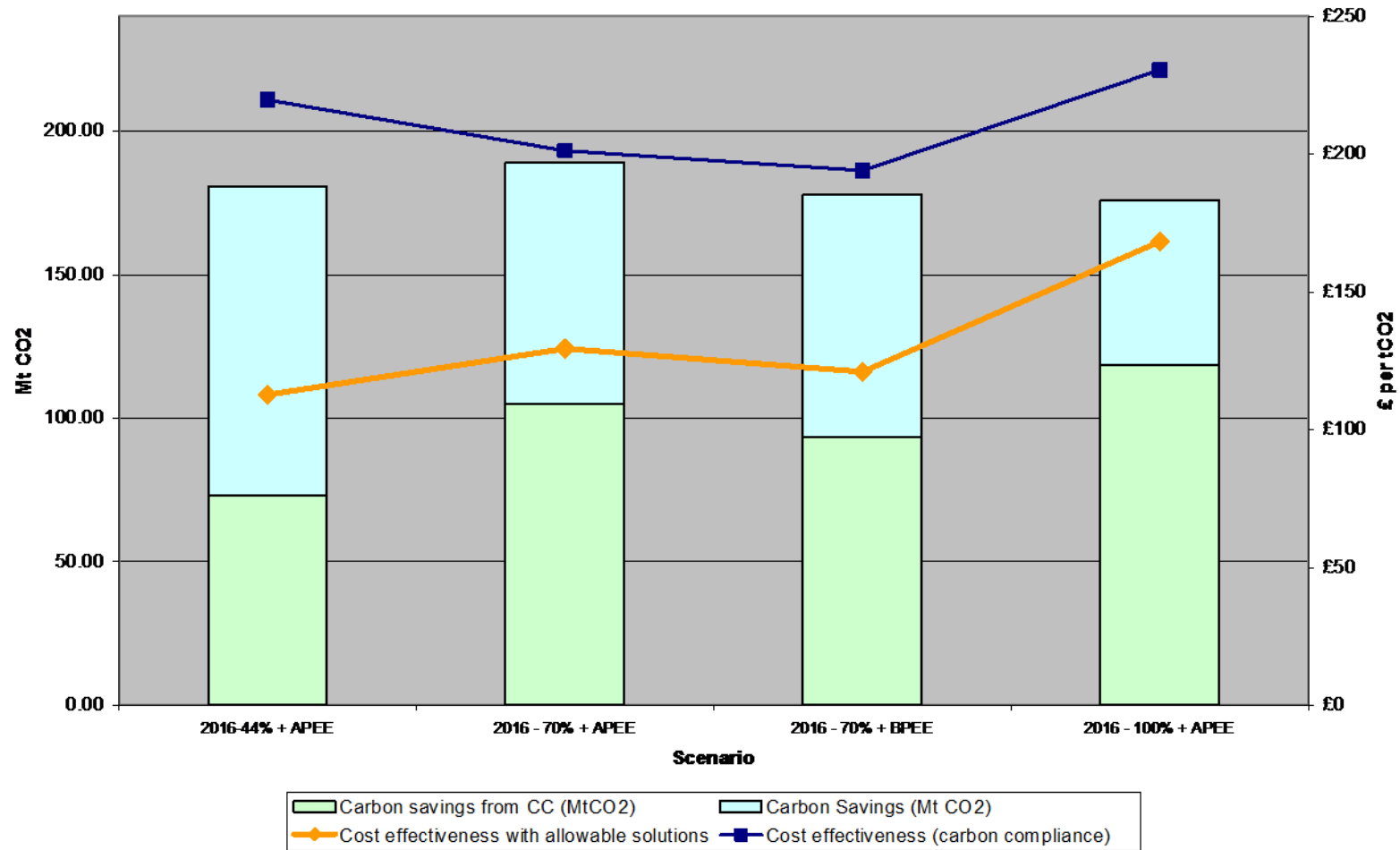


How is the carbon compliance level achieved

- If only best practice is mandatory..
- Greater role for biomass



Including allowable solutions



Comparison with the original definition



Regulatory changes in 2010 (unconfirmed)

- New assessment method
 - New emission factors
 - Low energy lighting
 - Secondary heating
 - Party Walls
- Minimal impact on new build cost
- Impact assessment predicts <1%
- Reduced thermal bridging important

Table 5: Domestic building specifications – Flat 25% option¹⁵

	Detached	Semi detached	Mid terrace	Gas flat	Electric flat
Roof (U-value)	0.20	0.25	0.25	0.25	0.15
Walls (U-value)	0.25	0.30	0.35	0.28	0.20
Party walls (U-value)	N/A	0.00	0.00	0.00	0.00
Floor (U-value)	0.20	0.25	0.25	0.25	0.15
Windows and doors (U-value)	1.7	2.0	2.1	1.8	1.4
Gas boilers (seasonal efficiency)	90%	90%	90%	90%	N/A
Electric heat emitters (seasonal efficiency)	N/A	N/A	N/A	N/A	100%
Secondary heating	None	None	None	None	None
Air permeability (m ³ /hm ²)	7	7	7	7	7
Thermal bridging (y)	0.04	0.04	0.04	0.04	0.04
Hot water cylinder insulation (mm)	100	100	50	Combi-boiler	100
Ventilation system	Natural	Natural	Natural	Natural	Natural
<i>Specific fan power</i>	N/A	N/A	N/A	N/A	N/A
<i>Heat recovery efficiency (%)</i>	N/A	N/A	N/A	N/A	N/A
Lighting – CFLs	100%	100%	70%	100%	100%

Source: Faber Maunsell

Implications for Code for Sustainable Homes ratings

- Spec that achieves Part L 2010 will not automatically hit Code 3 (under SAP 2005)
- Code uplift will persist unless standards are redefined

Element	Code 3 (2006)	Part L 2010
Ground Floor	0.16	0.17
External Wall	0.16	0.24
Bridging	0.04	0.08
Air tightness	5	7
Ventilation	MVHR	Natural

Update on code cost allowances

- consultation on definition of zero carbon homes
 - 33% agreed with costs
 - 32% disagreed
 - 35% did not know
- of those that disagreed many
 - said that the costs were overstated
 - said that the costs were an underestimate

What are the actual costs being experienced?



a) CLG Figures for Small Scale End Terrace House (4Q07 adjusted to 3Q09)

	Building Regulations	Code			
		3	4	5	6
Extra over cost per m ²		£60	£88	£211	£392
Extra over to Bldg. Regs.		£6,101	£8,850	£21,261	£39,614
Total Cost	£79,132	£85,233	£87,982	£100,394	£118,746
Total cost per m²	£783	£844	£871	£994	£1,176

b) Gentoo HT3 End Terrace 2B/4P House - 78m²

	Building Regulations	Code			
		3	4	5	6
Extra over cost per m ²		£51	£98	£238	£518
Extra over to Bldg. Regs.		£3,945	£7,637	£18,585	£40,365
Total Cost	£49,547	£53,492	£57,184	£68,132	£89,912
Total cost per m	£635	£686	£733	£873	£1,153
%age saving £/m²	-19%	-19%	-16%	-12%	-2%

What are the actual costs being experienced?

- Miller Homes
 - Code 3 = extra £5,000 to £7,000
 - Code 5 = extra £30,000
 - Code 6 = extra £50,000
- Persimmon
 - Code 3 = £3,000 to £4,000
 - Code 4 = £6,000 to £12,000
- Federation of Master Builders
 - Code 5 = £40,000

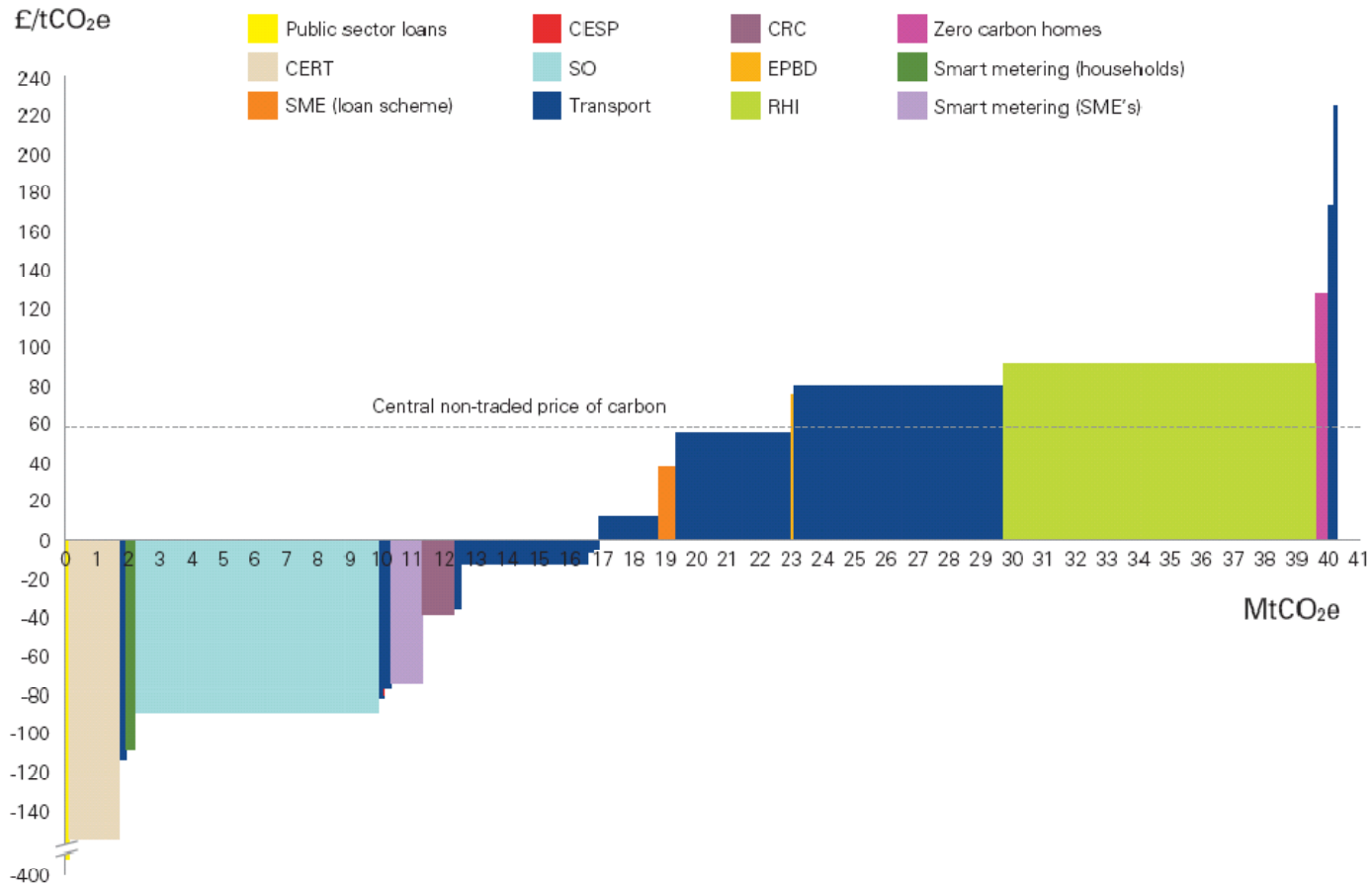


Is regulation driving low cost solutions?

- Overarching issues
 - Contribution to long term carbon targets
 - Clear technology path
 - Does not rely excessively on one solution
 - Costs not disproportionate (relative to other options)
 - Stimulates a co-ordinated approach (not islands of zero carbon)

Is regulation driving low cost solutions?

Policy MAC curve for policies that deliver savings in the non-traded sector



Conclusions

- Cost studies are indicative
- Market is already innovating and streamlining supply chains
- Still a wide range of costs being experienced
- 2010 Part L has limited cost impact but link to Code is unclear
- Zero carbon definition provides a platform for the industry to work around