

CRC Energy Efficiency Scheme

A reminder of the intent of CRC

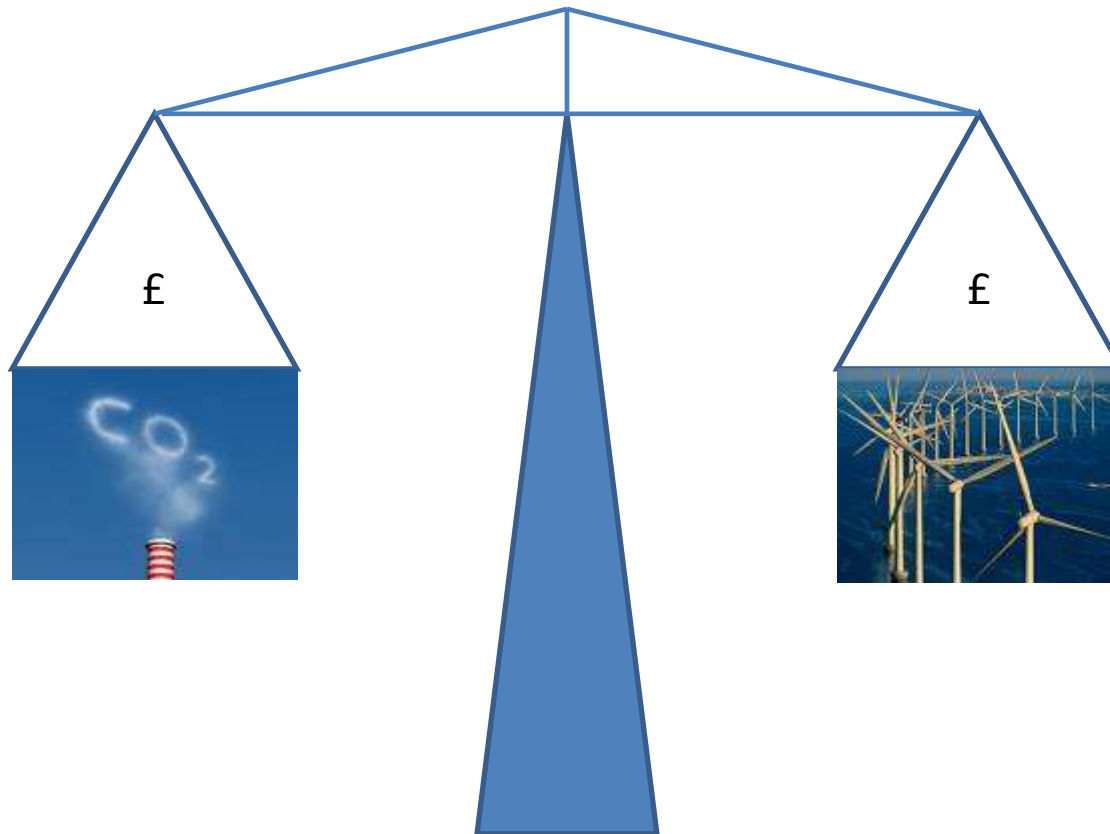
- It has been designed to raise awareness in large organisations, especially at senior level, and encourage changes in behaviour and infrastructure.
- Indirectly incentivises renewable energy.

CRC Energy Efficiency Scheme

- At the start of each year, purchase allowances from the auction (or fixed price sale during the introductory phase) according to the organisation's abatement strategy
- Pricing set until 2013
- Purchase additional allowances for emissions above projections
- Include emissions reduction strategies

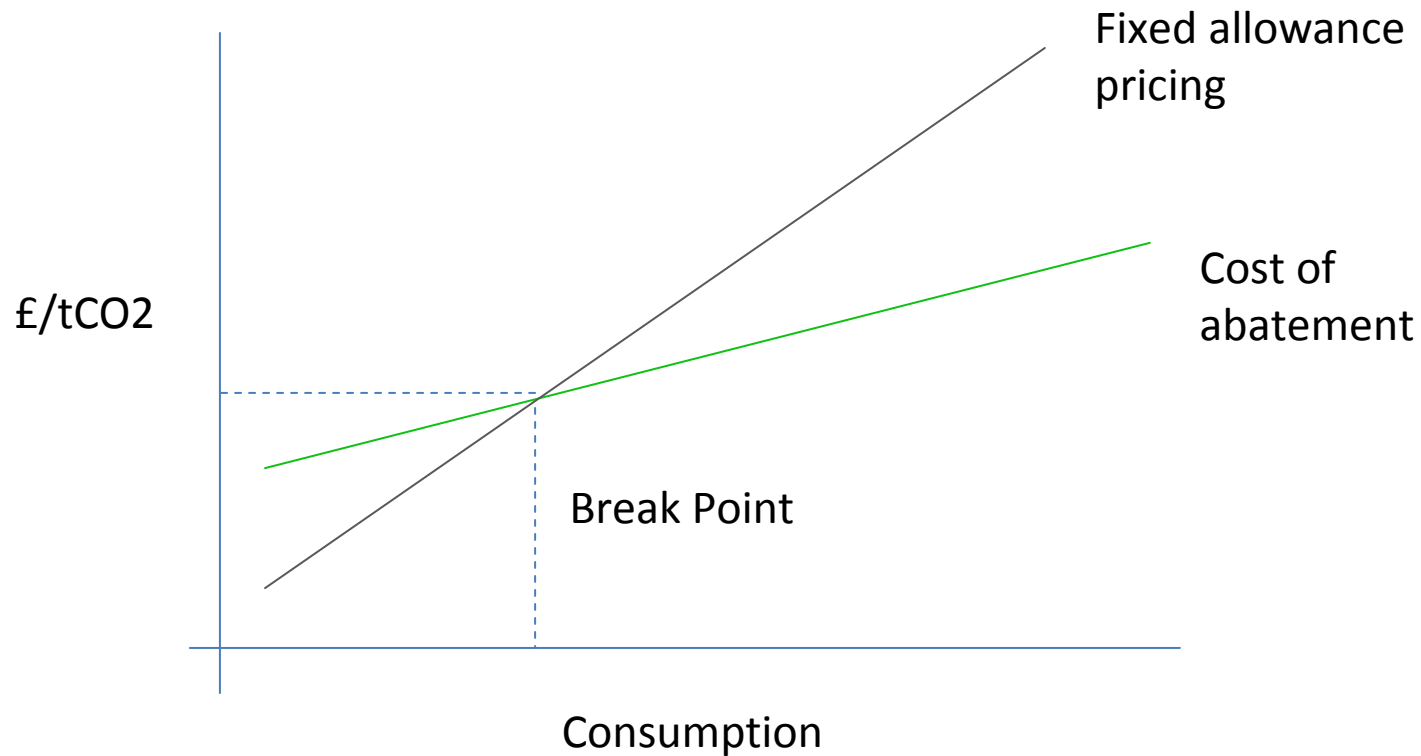
Green Investment Considerations

Pay to Pollute or Invest to be Clean



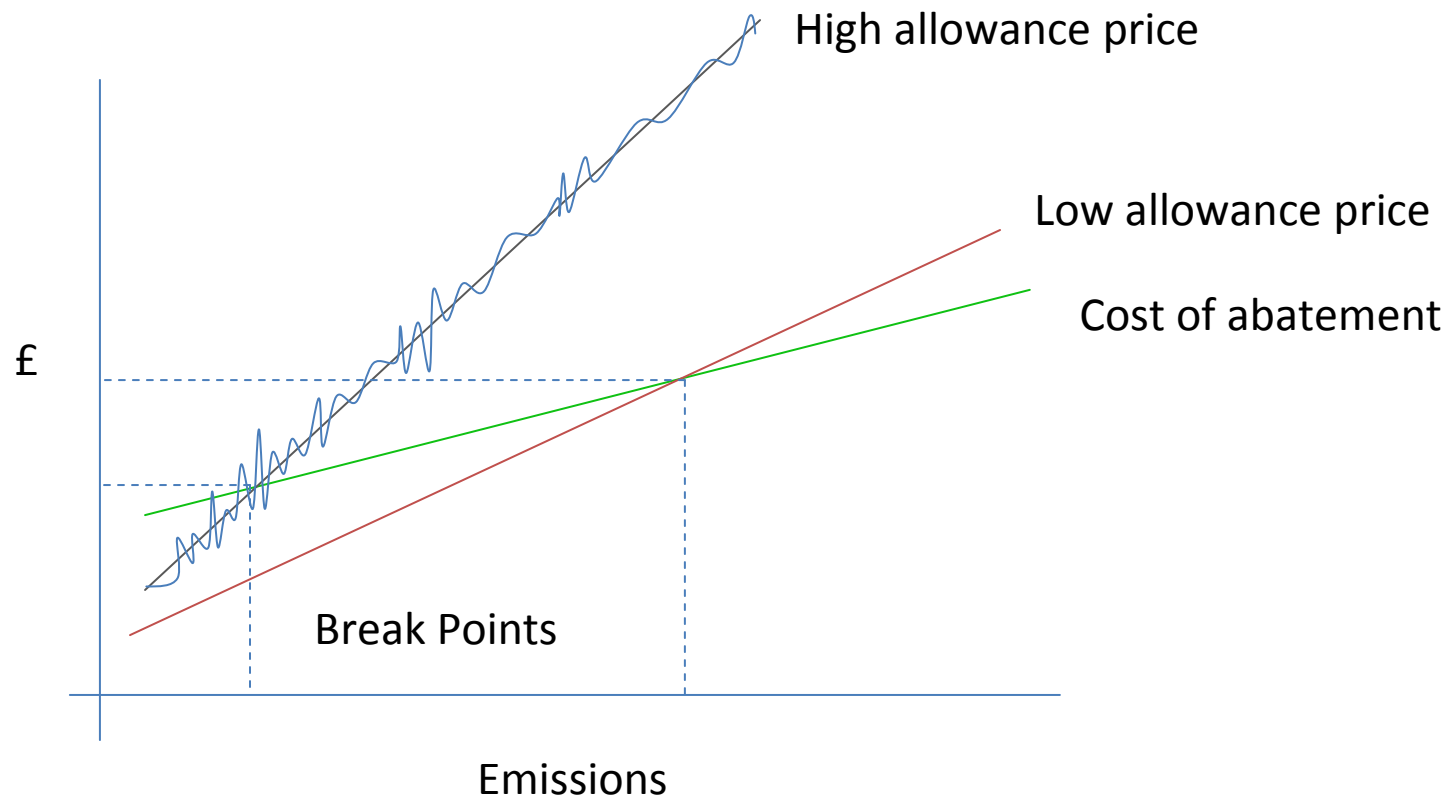
Green Investment Considerations

The price of Carbon – fixed price



Green Investment Considerations

The price of Carbon – variable price



Green Investment Considerations

The price of Carbon

- Buying additional allowances via the “safety valve”
- “Safety Valve” restricts overpricing on the open market
- Price equivalent to EU ETS market value
- Phase II prices have been above 20€/tonne

Green Investment Considerations

Revenue Recycling and League Table

- A performance league table that ranks participants based on their performance within the scheme
- This will have reputational and financial impacts as the organisations position in the league table will determine the bonus or penalty factor applied to their recycling payment
- Revenue from annual auction recycled back to participants, the recycle payment in October recycles funds raised in April of the same year.
- The greater the emissions saving the larger the reward

Green Investment Considerations

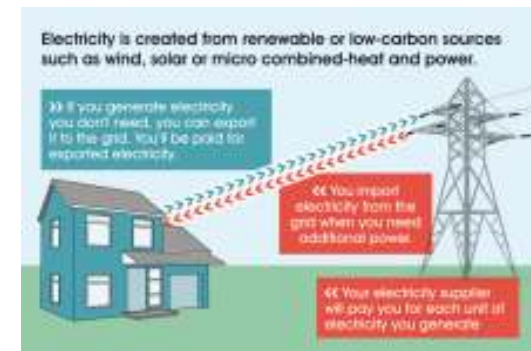
Revenue Recycling and League Table

- Receive recycling repayment proportional to the organisation's annual average emissions reductions since the start of the scheme, with a bonus / penalty based on their position in the league table.
- If you are a good performer (i.e. you reduce your emissions) and are at the top of the table you will get an additional 10% added on to your recycling payment as a bonus (so you could make money out of the scheme).
- If you come bottom of the league (i.e. your emissions grow) you will have 10% taken off your recycling payment as a penalty

Green Investment Considerations

Feed In Tariff

- From 1st April 2010, individuals, organizations and businesses in England, Wales and Scotland can claim cash back for electricity they produce from eligible renewable and low-carbon sources.
- The scheme provides a fixed payment for the electricity you generate, called the “generation tariff”. It also pays for any unused electricity that you export to the grid, the “export tariff”. A further benefit is that you won’t have to pay for the electricity that you generate and use yourself.



Green Investment Considerations

Feed In Tariff

- Electricity generated with an input fuel covered by the CRC allowances may be entitled to an electricity generating credit under CRC for the quantity generated and supplied.
- In addition a claim for electricity generating credits can be made where electricity is generated from renewable sources.

Green Investment Considerations

- If a Renewables Obligation Certificate (ROC) is issued or a Feed In Tariff (FIT) is claimed you will not be eligible for electricity generating credits.
- Where ROCs or FITs are not claimed an electricity credit at the grid average emissions rate can be claimed.
- Any electricity credits that you are entitled to can be subtracted from your CRC emissions.
- The value of these credits is calculated using the *grid average emissions factor*.

Green Investment Considerations

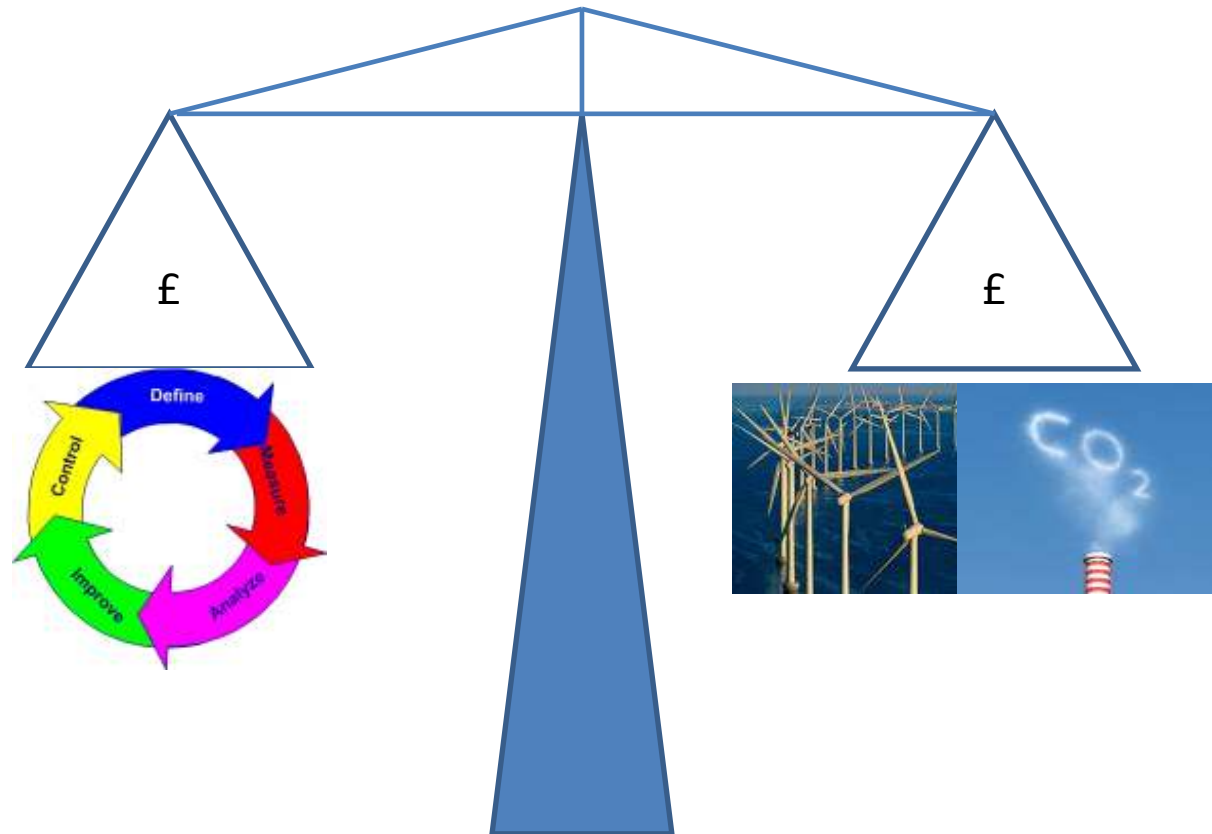
- Feed In Tariff vs Allowance

Generated kWh	Conversion Factor	kg CO2	tonnes CO2	Allowance Value	Allowance charge	Electricity Generation			Heating
						FIT Hydro	FIT Wind	FIT PV	Biomass
						>15 - 100kW	>15 - 100kW	>10 - 100kW	45kW-500kW
1	0.541	0.541	0.000541	£20	£0.01	£0.18	£0.24	£0.31	£0.09
100	0.541	54.1	0.0541	£20	£1.08	£17.80	£24.10	£31.40	£9.00
1000	0.541	541	0.541	£20	£10.82	£178.00	£241.00	£314.00	£90.00
2000	0.541	1082	1.082	£20	£21.64	£356.00	£482.00	£628.00	£180.00
10,000	0.541	5410	5.41	£20	£108.20	£1,780.00	£2,410.00	£3,140.00	£900.00
500,000	0.541	270500	270.5	£20	£5,410.00	£89,000.00	£120,500.00	£157,000.00	£45,000.00

Allowance Value £/tCO2	£20
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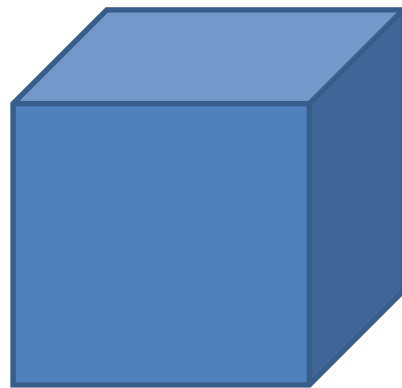
Green Investment Considerations

Sustainable Business or Emissions Driven



Green Investment Considerations

Examples of Sustainable Business Investment and Re-Engineering



Thinking outside of
the box

Product and Process Re-Engineering

Using thinner, lighter can ends can bring down costs, reduce energy use and cut emissions with a quick return on investment and no effect on product quality.

- Heinz trialled new Easy Open Ends for cans that set a new lightweight benchmark moving from 0.20mm to 0.18mm in thickness.
- The end is suitable for use on both two- and three-piece 73mm diameter cans.
- They were designed and developed by Impress using Corus double rolled steel.

Product and Process Re-Engineering

- **£404,000** saved each year by Heinz using light-weight ends.
- The amount of steel saved by Heinz every year just by light-weighting its Easy Open Ends is **1,400 tonnes**.
- **18%** increase in extra Easy Open Ends that can fit on each pallet for Heinz following light-weighting.



Product and Process Re-Engineering

- There are 5 billion food and pet food cans sold in the UK every year.
- The value of the UK canned food and pet food markets is worth £3.7 billion.
- 44.9 million kWh of energy could be saved by the canning industry if all of the cans with Easy Open Ends sold in the UK used the light-weight end.
- This equates to a reduction of 3,780 tonnes in emissions if all food and pet food cans in the UK with Easy Open Ends switched to the light-weight can ends.

	Per million cans	For the UK's 2.8 billion EOE food and pet food cans
Steel saved	2.1 tonnes	5,880 tonnes
Carbon emissions savings	1.35 tonnes	3,780 tonnes
Energy savings	16,040 kWh	44.9 million kWh

Source : WRAP

Product and Process Re-Engineering

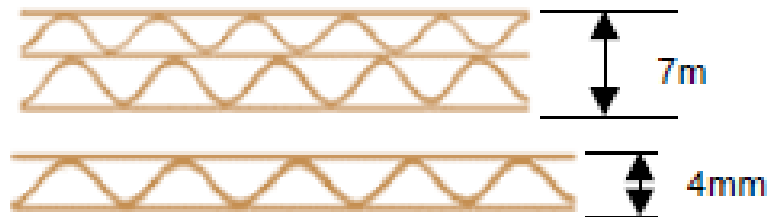
Reducing corrugated cardboard weight without compromising performance.



- Packaging distributor Kite Packaging Ltd (Kite) wanted to cut down the amount of space in its warehouses taken up by corrugated cardboard cartons, thereby improving logistical efficiencies, saving money and reducing the amount of card that goes into the household waste stream.
- The boom in internet shopping – especially for household appliances, electronics, books, videos, CDs and computer games – means that more and more products are packaged in corrugated cardboard cartons for delivery to the consumer.

Product and Process Re-Engineering

- Household corrugated paper waste was reduced by replacing current double wall stock cartons with a single wall alternative reducing the cross section by 3mm.
- The change has saved Kite around £6000 per year and saved an estimated 36 tonnes of paper annually, 25 tonnes of which would ultimately have entered the household waste stream.
- Adopting thinner cartons also resulted in carbon dioxide (CO₂) emission savings of 30% as fewer road trips were required to transport the same amount of boxes from manufacturer to distributor to end-user.



Product and Process Re-Engineering

Company Carbon Savings

	Present scenario (tonnes carbon/year)	New scenario (tonnes carbon/year)
Outbound 44ft lorry (full)	1,273	893
Inbound 44ft lorry (empty)	1,273	893
Outbound 7.5t lorry (full)	499	357
Inbound 7.5t lorry (empty)	499	357
Total	3,544	2,500

Industry Financial Savings

	Annual cost savings per tonne	Annual cost savings per 1000 tonnes
Paper material saving	Negligible	Negligible
Pallet saving	£55	£55,000
Transport saving	£60	£60,000
Storage saving	£55	£55,000
Overall saving	£170	£170,000

Source : WRAP

Product and Process Re-Engineering

Building Lighting Replacement Programme

Lighting at an MOD establishment was reviewed to ascertain if savings could be made for an operations room that required 24hour lighting 365 days per year.

A total of 2266 fittings were identified for replacement. By changing the fittings and reducing the energy consumption of the bulbs the site was able to achieve large cost savings.

Product and Process Re-Engineering

- The cost of replacement for the lighting totalled £291,734.
- The works resulted in financial savings of £42,691 per year.
- Emissions have been reduced by 318tonnes