

**From:** newsletter@terrainfirma.co.uk  
**Subject:** The Low Carbon Agenda #6, July 2008: Aiming higher - low carbon processes  
**Date:** 22 July 2008 15:15:30 BST  
**To:** gareth@terrainfirma.co.uk  
**Reply-To:** newsletter@terrainfirma.co.uk  
2 Attachments, 21.6 KB

## The Low Carbon Agenda

No.6 / July 2008

### Welcome again

Last month we looked at Carbon Management - all the really simple things an organisation can do to reduce their carbon footprint without breaking sweat. This month we're going to take it up a gear and look at what happens when we open our wallets and invest in low carbon processes.

I'd like to thank everyone who has sent me feedback on the Low Carbon Agenda - please keep it coming and don't forget to tell your friends.



All the very best,

Gareth

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### Why we need change

US Energy guru Amory Lovins reckons that only 1% of the energy in the fuel we put in our cars is used to move the driver. The rest is lost in the engine and transmission, or is used to shift the car itself.

The same kind of inefficiency is built into our buildings and manufacturing processes. Designing a building that requires hardly any heating or air conditioning isn't difficult, but we are locked into the same old same old with only a few low carbon 'exemplars' to admire. Most chemical plants use huge, inefficient motors to pump liquids against valves and around 90° corners, wasting enormous amounts of energy.

Why do we do this?

Two main reasons:

1. Habit - we tend to do what we've always done.
2. We tend to design all our buildings, infrastructure and processes to minimise capital costs. This is often at the expense of operating costs, in particular energy costs.

### Low Carbon Processes

A low carbon process is one that is designed to minimise carbon emissions. Examples include:

- In a manufacturing company, a factory redesign switched to short, fat, straight pipes, cutting energy use by over 90%, and reducing capital costs as smaller pumps were required;
- In a food company the ovens had been located beside the cold rooms, so the two were working against each other. Moving them apart slashed energy bills;
- In a fruit storage warehouse, all the hot water requirements were met with heat from the cool room compressors, with excess hot water being sold to the company next door.

The economic benefits of low carbon processes can be cumulative, for example:

- If you reduce friction in a manufacturing system you can reduce the size of motors, cutting capital costs;

- If you improve the insulation in a building you can install a smaller heating and/or cooling system, also cutting capital costs.

So despite what many people think, energy efficient options can deliver reduced capital costs, but you have to look at the bigger picture.

### Some Basic Principles

Opportunities for switching to a low carbon process are very dependent on the sector you are in, but here are some generic principles that should help you on your way:

1. Be prepared to invest to save:
  - design for lower operational costs as well as capital costs.
2. Don't do what you always do :
  - force your process designers to challenge every assumption;
  - use the "toddler test", ie keep asking "but, why?" until the question can't be answered;
  - check out what works in other sectors to see if the idea is applicable to yours.
3. Optimise at the system level rather than individual components:
  - make sure you take advantage of reduced energy requirements in one component by specifying other components to match - see the manufacturing example above;
  - make sure components of your system are compatible and not working against each other - see the food company example above;
  - design to re-use material, water and energy throughout.
4. Replace carbon with information:
  - better control systems in manufacturing to avoid wasting energy;
  - building management systems for offices and other buildings to manage heating and cooling;
  - planning systems to increase the efficiency of transport etc.

### Next Month

Next time we'll be looking outside the factory fence/office window at how to reduce the carbon footprint of your supply chain.

### News

[The Carbon Trust](#) is claiming that British businesses could save themselves £2.5bn over the next 12 months if they implemented energy efficiency schemes that would also cut 22m tonnes of carbon emissions.

[The ENDS Report](#) is reporting that the [EU's Eco-design Directive](#), which currently focusses on energy-using products, could soon be expanded to cover products which indirectly use energy, such as showerheads.

And [the BBC](#) is reporting that after months of fuel price rises, UK supermarkets are starting to reduce petrol prices. This is due to a reduction in demand rather than a lowering of crude oil prices.

### Tip of the Month

Zone heating and lighting systems so they can be adjusted to shift patterns. For example, there is no point in heating an entire building just so one person can supervise weekend deliveries.

The small print:  
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