

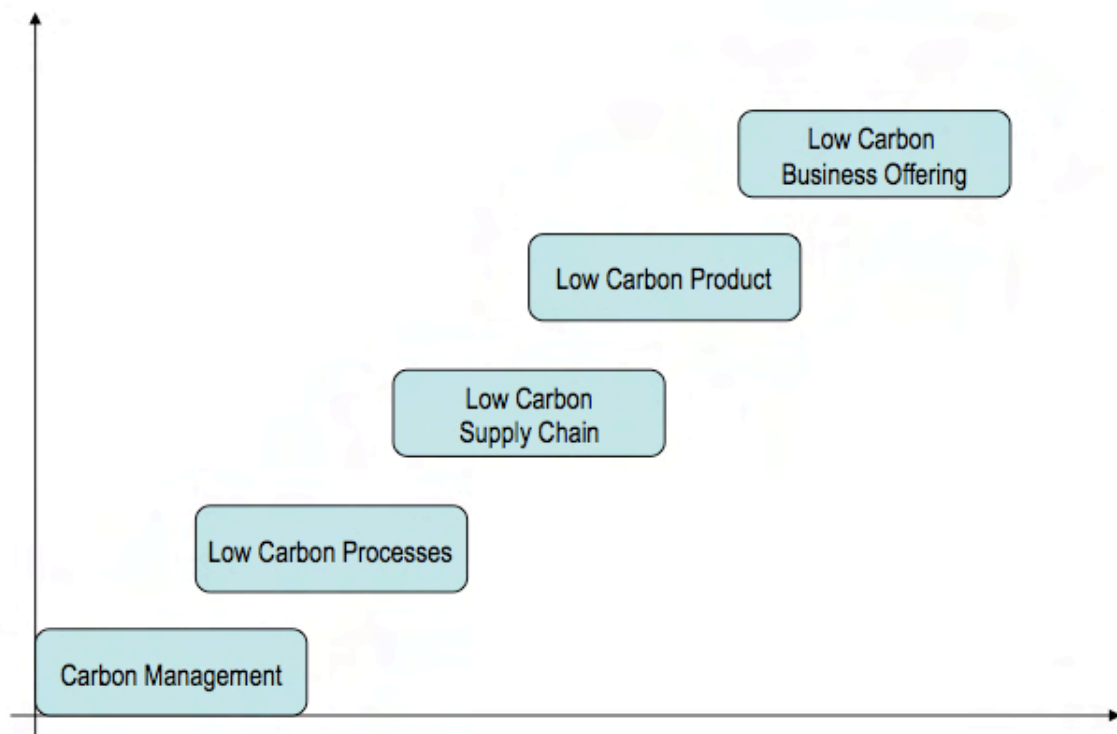
Low Carbon Business Strategies

Gareth Kane

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Introduction

Reams of paper have been produced about [measuring carbon footprints](#), but as the old farmers' saying goes, "a pig never got fat by weighing it". In other words it is not the measurement that matters but the action you take as a result. This white paper describes five strategies of increasing complexity to cut your carbon footprint – see the graph below. The axes on the graph can represent risk, reward, complexity or innovation.



1. Carbon Management

This covers all the low or no cost actions you can take immediately to save energy and cut costs. This has been the main focus of free or low cost Government services such as the UK's Carbon Trust. Typical measures include:

- Green travel planning;
- Staff awareness and training;
- Maintenance of equipment (eg fixing compressed air system leaks);
- Running 'switch it off' campaigns;
- Switching to low energy lighting;
- Zoning heating and lighting to match shift patterns;
- Better print management (eg duplex printing).

2. Low Carbon Processes

To attain the next level you must align your internal processes, equipment and/or buildings with the Low Carbon Agenda. Obviously this will require investment, disruption and thus risk, but if you do it properly you should be able to cut capital costs. Here are some basic principles:

- Be prepared to invest to save: design for lower life cycle costs (aka through life costs).
- 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.
- 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, make sure components of your system are compatible and not working against each other (eg heating and cooling), design to re-use material, water and energy throughout.
- 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, route planning systems to increase the efficiency of transport etc.

3. Low Carbon Supply Chain

For most organizations, much of their carbon footprint will be in their supply chain rather than within the factory fence/office walls. There are two basic principles to reducing your supply chain footprint:

a. Buy less stuff

This is the easier of the two, as less of the same thing is always better. Techniques include:

- Checking you really do need the product (you'd be surprised how much stuff gets bought and never used);
- Ensuring dimensions and quantities match your needs;
- Carefully managing stocks of perishable items;
- Keeping stocks as low as possible (eg using lean manufacturing techniques)

For example, I have worked with two companies who were purchasing components too long for their needs and cutting them to length every time. By buying smarter, less material was being bought in the first place, the cutting was eliminated and less waste was produced, saving money and carbon.

b. Buy 'better' stuff

Where 'better' in carbon terms means:

- Materials with a low 'embodied energy', for example natural materials and recycled man-made materials (eg sheep's wool insulation has 9% of the embodied energy of rockwool, recycled aluminium has 5% of the embodied energy of virgin material);
- Products and services which are powered by low carbon forms of energy (eg a solar powered web services provider or a cycle courier);
- Products and services which require less carbon to get from where they are produced to where you need them (eg buying local food).

There are a couple of more advanced techniques for reducing the carbon footprint of your supply chain:

a. Buy a service rather than a product

For example:

- Xerox do not sell photocopiers, rather they provide a copying service. As such their machines have been designed to be long lasting and easily upgradeable. You pay per copy you make, which discourages you from being wasteful.
- Solvent management services where the supplier keeps ownership of the solvents, advises on how best to use them and removes them for recycling.
- Interface's novel flooring service where they lease carpet to their customers and then replace and recycle worn tiles as and when necessary, leaving the unworn tiles untouched.

b. Engaging your suppliers

You may find your suppliers can change their product to suit both parties. When the Carbon Trust carried out their carbon footprint of Walker's Crisps, they found that potato suppliers were keeping the potatoes hydrated as they were sold by gross weight - but the water need to be driven off during frying. Walker's talked to the suppliers and swapped to buying by dry weight, the hydration stopped (saving carbon) and the frying took less energy (saving more carbon).

4. Low Carbon Products and Services

It is estimated that 80% of a product's environmental impact is decided on the drawing board. Redesigning your product or service allows you to reduce its carbon footprint across its whole lifecycle (raw materials extraction, manufacturing supply chain, distribution, use, disposal). The two basic principles are the same as for green procurement:

a. Use less stuff (materials, energy, water):

- Dematerialisation - design material out of the product (eg use stronger, lighter materials);
- Use energy efficient components (eg motors, lights, integrated circuits);
- Reduce friction, electrical and other forms of resistance (eg aerodynamic vehicles);
- Reduce carbon from transport and distribution (eg local distribution networks, smarter route planning, multiskilled operatives).

b. Use better stuff

- Use low embodied energy material (recycled materials, natural materials);
- Use low carbon forms of energy (solar, wind, hydro, biomass etc).

5. Low Carbon Business Offerings

The most radical option involves developing innovative products/services to provide a low carbon alternative to the norm. For example, the rise of the MP3 player and on-line sales has slashed the carbon involved in creating and distributing (and wasting) CDs. Car clubs reduce the numbers of cars on the road and shift the cost away from the purchase price and towards a 'per km' basis.

Opportunities can be grouped into four different categories:

- Replacing products with services (eg car clubs, leasing equipment and facilities, chemical management services);
- Replacing products with information (eg MP3s, movies on demand, ebooks);
- Providing enabling services which allow customers to take low carbon options (eg eBay, freecycle, video conferencing);
- Developing and selling novel enabling products (eg renewable energy systems, low carbon fuels, smart meters, control systems).

About Gareth Kane

In Gareth's eleven years' experience in the environmental and sustainability sector he has worked with hundreds of organisations from micro-companies through to trans-national corporations, across many sectors including construction, pharmaceuticals, engineering and hospitality.

Gareth is an approved expert advisor for Envirowise, a co-ordinating reviewer of research for the UK Government's Sustainable Consumption and Production programme, an expert reviewer of EU Interreg energy project proposals and has been appointed to the pool of experts for the EU's URBACT programme. He recently authored "The Green Business Bible" ebook.

Gareth has a Bachelor's degree in Engineering from Cambridge University and a Master's Degree in the Eco-Design of Large Made to Order Products (eg ships, oil platforms) at Newcastle University. He is a member of the Institute of Engineering and Technology and a Chartered Engineer.



Our clients say:

"If you want to incorporate sustainability principles into your business, you need to talk to Terra Infirma."

Dale Robinson, MD,
Stone Homes Ltd

"I thoroughly recommend Gareth Kane and Terra Infirma to anyone who needs to put sustainability principles at the heart of their project or organisation."

Nick Devitt
Dott07

About Terra Infirma

Terra Infirma's slogan, "bringing sustainability to life", sums up our company ethos: turning the theory of sustainability into practical reality. The company delivers a wide range of services in the sustainability field:

- Consultancy: feasibility studies, scoping reports, carbon footprinting, business planning etc;
- Embedding Sustainability: working with our clients' staff to develop and implement sustainability programmes such the 'Lean, Mean & Green' programme;
- Training: a wide range of off the shelf and bespoke training courses are available;
- Facilitation of events and workshops.

Recent clients include: AEA Technology Ltd, DEFRA, Dott 07, Durham County Council, Gentoo Housing Group, the Low Carbon Innovation Network, NISP North East, RWE nPower and Stone Homes Ltd.

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