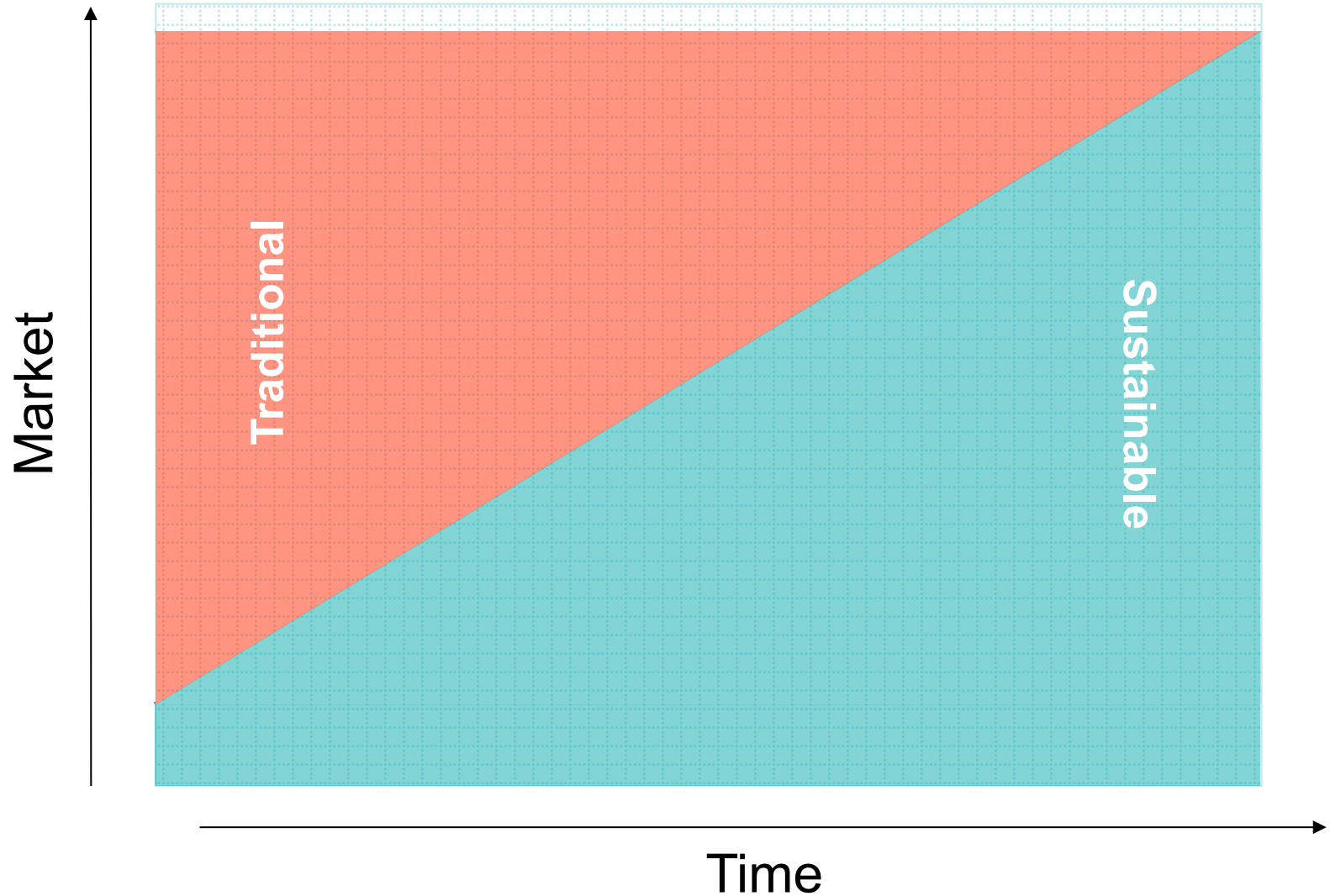


Aggregate Carbon Footprinting

Richard Allen

December 2011

Over time the traditional marketplace will become a more sustainable marketplace



Carbon measurement is the most mentioned non-financial metric - this will only become more important

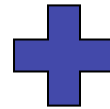
- Carbon is often used as an abbreviation for Carbon Dioxide (CO₂)
- The Carbon Trust is a quasi government organisation
- The emphasis on carbon in recent years has meant that it is sometimes used as a proxy for energy and sustainability
- Carbon is the easiest sustainability indicator to measure and quantify
- Carbon budgets, taxes and a carbon floor price have been instigated by the government which further focus the attention of business
- It is likely that GreenHouseGas or carbon reporting will become a mandatory requirement for business



Aggregates typically have a relatively low carbon footprint; transport is over 65% of the total impact

Aggregate source	Process emissions (kg CO ₂ /t)
Bardon Hill	3.19
Haughmond Hill	6.40

Data taken from company monitoring system, 2010 annual figures for CO₂ only, please see supporting document for more information on the scope of this calculation.



Aggregate source	Distance to Norwich (km)	Transport emissions (kg CO ₂ /t)
Bardon Hill	208	7.44
Haughmond Hill	322	11.52

2010 Defra/DECC GHG conversion factors, updated 06/10/10, Annex 7: Freight Transport, 100% 3.5 - 33t artic; 1.03822 kg CO₂/km, per tonne impact based on 29 tonne load, single haul.



Aggregate source	Total emissions (kg CO ₂ /t)
Bardon Hill	10.63
Haughmond Hill	17.92

Carbon Footprinting of products and services has gained momentum in the past few years

- Most carbon footprinting work is a type of streamlined life cycle assessment
- Care needs to be taken to ensure units are comparable i.e. CO₂ or CO₂e, cradle to gate, cradle to grave etc.
- A number of standards exist (and more are being developed) for carbon footprinting e.g. PAS 2050 in the UK
- Environmental product declarations are becoming more common (of which carbon footprinting is one type)
- As buildings become more energy efficient and utilise little energy input for the in-use phase the relative impact of the embodied carbon will become more significant
- There are marketing and communication issues that have to be considered as part of any footprinting process
- Risk can be minimised with third party verification