



Why Manage your Carbon Footprint?

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Building System & Diagnostics

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Scope



- Overview of carbon policies
- Overview of industry trends
- Key benefits of carbon management
- Case studies of benefits

Global Carbon Policies



- However, increasing national and regional carbon policy being drafted.

Carbon Trends- Industry



- Increasing emphasis on CSR and supply chain management

Aug 2009- 75% of Firms Incorporate CSR into Procurement Bidding Process

Oct 2009- PepsiCo Reveals Method for Calculating Carbon Footprint of Products

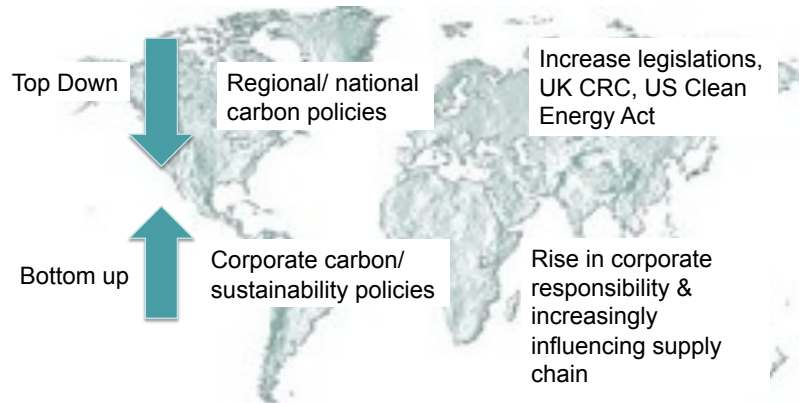
26 Feb 2010- Wal Mart Pledges to Cut Supply Chain Emissions by 20M tonnes by 2015



1 Mar 2010- M&S Product Portfolio to be 100% 'Eco,' 'Ethical' by 2020



Carbon Management Trends



Business Implications



More than half (56 percent) of Carbon Disclosure Project members surveyed said that 'in the future **they would cease doing business with suppliers that do not manage their carbon**'.

Feb 2010- *'To stay ahead of the curve, companies need to make sure they have fully embedded carbon considerations in their business strategy to ensure that climate change issues are properly addressed.'* ERNST & YOUNG
Quality In Everything We Do

2008- Wal-Mart suspended 126 suppliers for a year and shut down 35 suppliers permanently!

Aug 2009- 75% of firms incorporate CSR into procurement bidding process

Examples of Benefits



- 'You can't manage what you don't measure'
- Measurable e.g. costs savings (energy, packaging, transport)
 - carbon closely links with energy and costs

Grand Hyatt Singapore- energy efficiency, savings of \$1.2m a year
- Immeasurable/ indirect e.g. enhanced reputation, legislation future proofing, attract better employees
 - Consumer surveys – 4/10 willing to pay more to buy green products (UK cahoot 2008)

Carbon Management



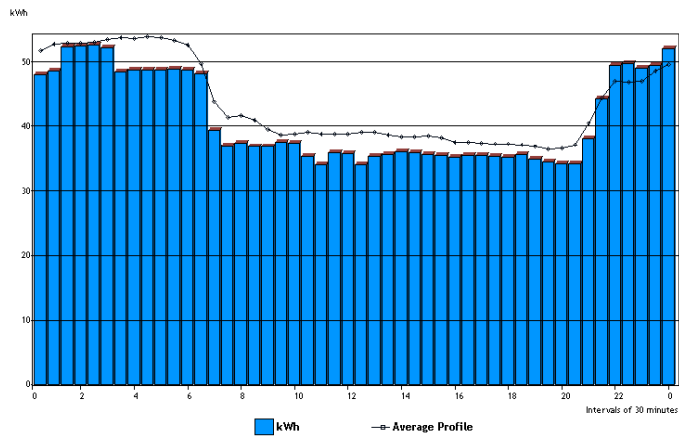
1. Measure baseline carbon footprint
2. Monitor & target setting
3. Implementation of carbon initiatives



Tools



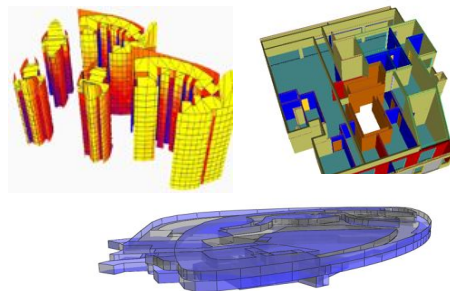
- Energy load profile



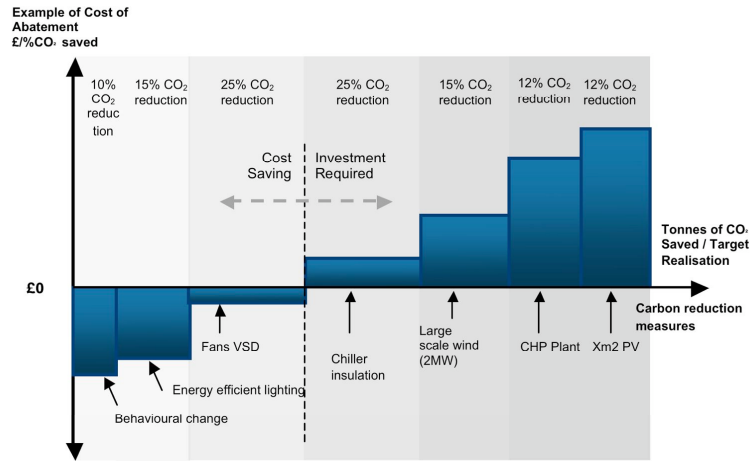
Tools



- Simulation tools
 - thermal dynamics modelling
 - energy modelling
 - solar/ daylighting
 - traffic modelling
- Carbon feasibility studies



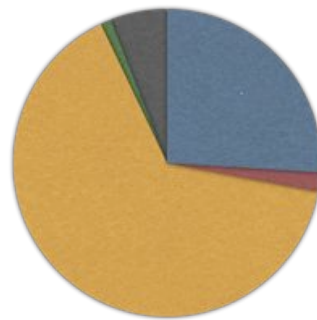
Carbon Strategy



Airport example



- Airport buildings
- Aircraft movements
- Passenger surface access
- Airside activities
- Staff surface access



Recommended Initiatives



- Allow us to target 'hot spot' emission areas
- Carry out targeted carbon reduction feasibility studies.
 - chiller efficiency
 - lighting
 - aircraft taxiing, GPUs



Project : **Mapletree Business City**
 (Development at 10,20,30 Pasir Panjang Road)
Developer : **Mapletree Investments Pte Ltd**



**Green Mark
 PLATINUM**
**12,086,000
 kWh/year
 energy saving**
**0.62 kW/
 Rton**
 “mini-district”
 chilled water
 cooling plant
 efficiency





313@ Somerset



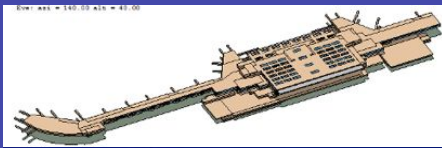
Quayside Hotel

Retail Malls/ hotels

Vivocity



Others



Changi Airport Terminal 3



Gardens by the Bay



Mosque at DOHA international Airport

Conclusion



- Increasing global trend towards calculating and reporting carbon emissions of organisations and products
- Drivers from policy but also increasingly from supply chain management
- Measuring carbon allows you to target most efficient and cost effective initiatives



Thank You

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