



PRODUCT SERVICES GREEN IT ADVISORY SERVICE BRIEFING PAPER

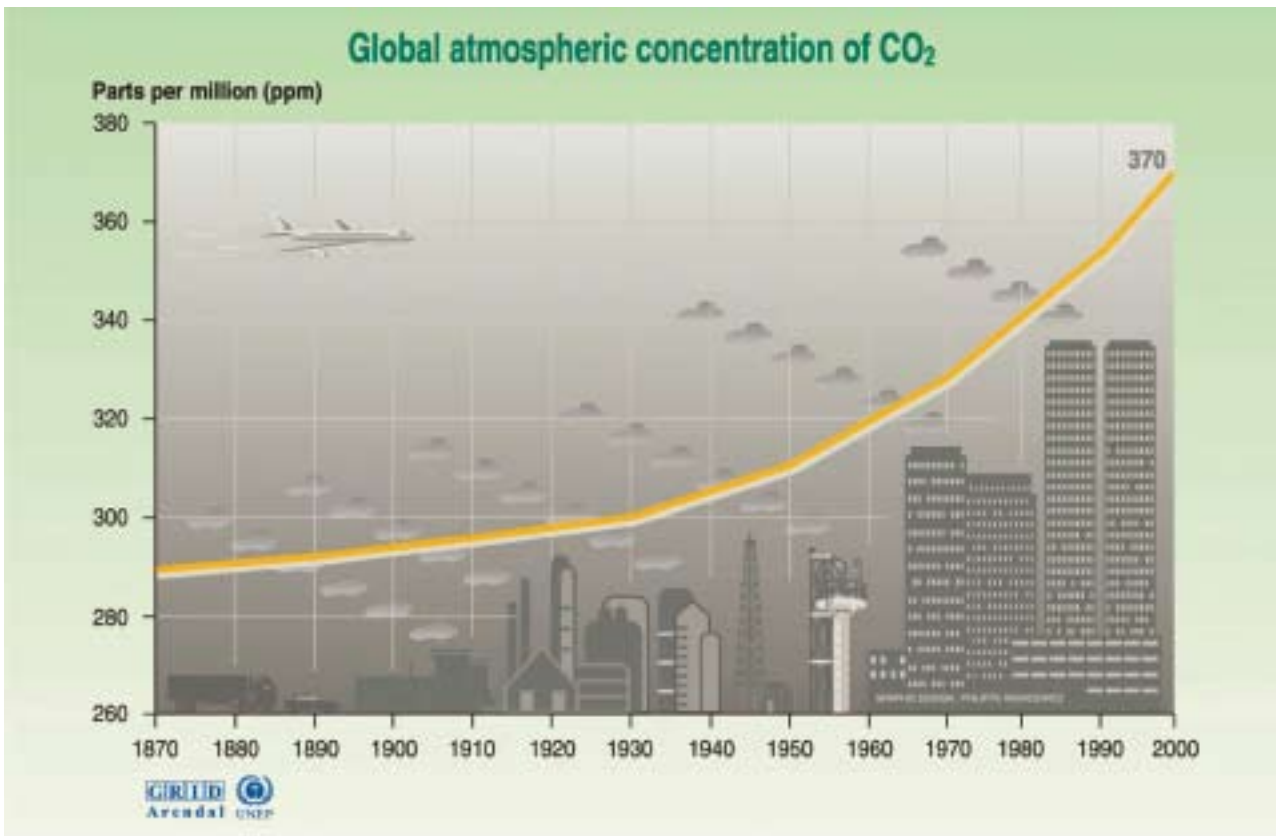
INTRODUCTION

Climate Instability, Global Warming and CO₂ emissions have become the key expressions characterising what is considered to be the most significant threat to mankind and the environment. The issue has captured the attention of the world's political and business leaders, with action being focussed primarily on reducing emissions of CO₂ (carbon dioxide gas).

Scientists have demonstrated a clear correlation between the level of CO₂ in the atmosphere and planet surface temperature; the "greenhouse effect", whereby more heat from the sun is trapped at higher CO₂ concentrations.

Climate instability, possibly caused by increasing levels of greenhouse gases in the atmosphere, may affect the lives and livelihoods of many millions of people around the world. The potential environmental impact and consequent economic implications of Climate Change are described in the recent Stern Report (November 2006). Fortunately, the scientific consensus seems to indicate that if governments, society and businesses act now to prevent further damage, the worst projected outcomes can be avoided.

Human-generated CO₂ emissions stem from burning fossil fuels, predominantly for electricity generation, energy-intensive industry and transport. These activities, which together account for 66% of man-made emissions, are all impacted significantly by IT-dependent organisations.



Sources: TP Whorf, Scripps, Mauna Loa Observatory, Hawaii, institution of oceanography (SIO), university of California La Jolla, California, United States, 1999

When the full range of greenhouse gases is combined and expressed as CO₂ equivalent, the concentration rises to 430 ppm (source, Stern Report, November 2006).

ENVIRONMENTAL INITIATIVES

A number of initiatives have been undertaken to reduce CO₂ emissions. Those discussed below are focused on the effects of IT within the larger framework of business and organisations operating within the UK.

Government Action

The UK Government has focussed on increasing awareness of the issue, raising fossil fuel taxation and participating in global initiatives such as the Kyoto conference and treaty.

Awareness has been greatly increased, and the UK Kyoto target for Greenhouse Gas reduction will be achieved. This target requires a 12.5% reduction in emissions by 2010, from the 1990 level. In spite of this achievement, rising taxation – an indication of politicians' apparent commitment to the "polluter pays" concept - has failed to slow the consumption of fossil fuels (petrol, diesel and kerosene in particular).

Business

The Stern Report warned that "BAU climate change will reduce welfare by an amount equivalent to a reduction in consumption per head of between 5 and 20%". However, "the annual costs of stabilisation at 500-550 ppm CO₂e...(are estimated)....to be around 1% of GDP by 2050 – a level that is significant but manageable".

Business is responding to the challenge to reduce CO₂ emissions as part of its wider effort to demonstrate an environmentally-friendly profile whilst reducing costs. In addition to many recycling initiatives, including that of waste electrical and electronic equipment, companies are finding ways to reduce or offset CO₂ emissions and are encouraging participation from their employees.

GreenFact

One gallon of petrol or diesel emits 11.4 kilogrammes of CO₂ when used in a vehicle.

Vehicle manufacturers have made efforts to raise the MPG of all types of vehicles. Further improvements in fuel performance, introduction of cleaner fuels and bio-fuels and the search for new and sustainable forms of fuel are all gathering momentum due to the imperative to reduce CO₂ emissions. Tyre manufacturers have launched products with low friction coefficients that further improve fuel consumption.

IT Industry

GreenFact

Switching a PC off overnight and at weekends can save up to £53 a year in electricity cost, per PC.

At Computacenter, we are extending the scope of our Green IT Advisory Service with the objectives of:-

- increasing awareness of environmental issues around IT equipment acquisition and re-marketing opportunities
- advising customers on reduction of cost and CO₂ emissions
- helping customers evaluate the environmental performance of their IT estate
- facilitating the enhancement of our customers' environmental profile

Computacenter has completed a project to calculate the CO₂ generated over the full life-cycle of a desktop PC, from manufacture to final disposal, in order to understand the issues and implications involved in being able to supply the market with a carbon-neutral PC.

GreenFact

During a PC's life-cycle from manufacture to disposal, approximately two tonnes of CO₂ are generated. Up to one tonne of this amount is generated through usage over three years when the PC is switched on for 24 hours a day, 220 days a year.

These emissions can be offset through contributions to a carbon reduction project to replace fossil fuel use with renewable energy in a developing country. It is possible to offset the CO₂ footprint of a PC over its life-cycle for about £15.

IT manufacturing companies, from component level through to PC systems and peripherals, are increasingly focussed on reducing the amount of energy used in their operations and consumed by their products.

GreenFact

Switching a PC off overnight and at weekends can save up to £53 a year in electricity cost, per PC.

Recent work carried out by Fujitsu Siemens Computers into relative PC power consumption, electricity usage/cost savings and consequent reductions in CO₂ emissions has identified the benefits achievable from an effective “Switch Off” campaign.

Typical power consumption and electricity costs at different levels of usage

365 days a year, 24 hours a day (No Switch Off)						
	Desktop	Display	Desktop	Display	Total	Total
	kWh	kWh	£	£	kWh	£
PC+Display	569	175	£52	£16	745	£68
220 days a year, 24 hours a day						
	Desktop	Display	Desktop	Display	Total	Total
	kWh	kWh	£	£	kWh	£
PC+Display	343	106	£31	£10	449	£41
220 days a year, 8 hours a day (Switch Off)						
	Desktop	Display	Desktop	Display	Total	Total
	kWh	kWh	£	£	kWh	£
PC+Display	114	35	£11	£4	150	£15

Financial benefit, per PC+display, per year	£53
CO2 emissions reduction, per PC+display, per year	374 kgs/CO2

The example shown in the table is based on a desktop PC consuming 65 watts and an LCD display consuming 20 watts.

GreenFact

An office with fifty desktop PCs may generate up to 10kW of heat.

In addition to an increasing number of companies exploring or achieving a carbon-neutral trading platform, significant efforts and investments are being made to reduce or eliminate toxic materials in PC systems and component manufacturing.

GreenFact

The lead content of a typical CPU motherboard has fallen from 12 grammes to 1 gramme, soon to be zero.

These developments are essential to comply with RoHS and WEEE regulations coming into force in the UK and Europe in 2007. RoHS addresses the removal of substances such as lead, mercury and cadmium; WEEE requires an increase in recycling and compliance with stricter disposal processes.

GreenFact

The EU disposes of c.9 million tonnes of electrical and electronic waste each year, much into landfill.

Computacenter’s IT disposal subsidiary RDC re-markets and recycles end-of-life IT equipment. Re-marketing benefits the environment by extending the life of the equipment. Every material present in the remaining equipment – glass, plastic, various metals, silicon, etc. – is 100% processed and recycled, ensuring no landfill or offshore disposal of IT waste.

In conclusion, Computacenter aims to keep its customers ahead of their competition and informed of developments in the field of environmental impact, as with all other aspects of IT.